CDP-395/M31

SERVICE MANUAL

AEP Model

CDP-395/M31

E Model

Australian Model

CDP-M31

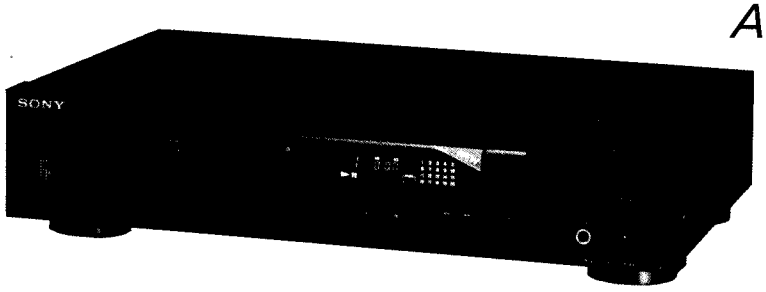

Photo: CDP-395

Model Name Using Similar Mechanism	CDP-291/391
CD Mechanism Name	CDM14-5BD1
Base Unit Name	BU-5BD1

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz – 20 kHz ± 0.5 dB
Signal to noise ratio	More than 100 dB
Dynamic range	More than 97 dB
Harmonic distortion	Less than 0.004%
Channel separation	More than 95 dB

Outputs

LINE OUT (FIXED) (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
LINE OUT (VARIABLE) (phono jacks)	Output level max. 2 V (at 50 kilohms) Load impedance over 50 kilohms
PHONES (for CDP-395) HEADPHONES (for CDP-M31) (stereo phone jack)	Output level max. 10 mW Load impedance 32 ohms

General

	CDP-395	CDP-M31
Power requirements	AEP Model (CDP-395/CDP-M31) 220 – 230 V AC, 50/60 Hz Australian Model (CDP-M31) 240 V AC, 50 Hz E Model (CDP-M31) 110, 120, 220 or 240 V AC, adjustable, 50/60 Hz	
Power consumption	12 W	12 W
Dimensions (approx., including projections)	430 × 100 × 280 mm (w/h/d) (17 × 4 × 11 1/8 inches)	355 × 95 × 305 mm (w/h/d) (14 × 3 3/4 × 12 1/8 inches)
Weight (approx.)	3.5 kg (7 lbs 12 oz)	3.2 kg (7 lbs 1 oz)

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

– Continued on next page –

MICROFILM

COMPACT DISC PLAYER

SONY

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Supplied accessories

Audio cord	1 (2 phono plugs – 2 phono plugs)
Remote commander	1
R6(size AA) batteries	2
AC plug adaptor (for some areas)	1

Remote commander RM-D391

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions	Approx. 40 × 20 × 175 mm (w/h/d) ($1^{3}/_{4} \times {}^{13}/_{16} \times 7$ inches)
Weight	Approx. 95 g (4 oz) Including batteries

Design and specifications subject to change without notice.

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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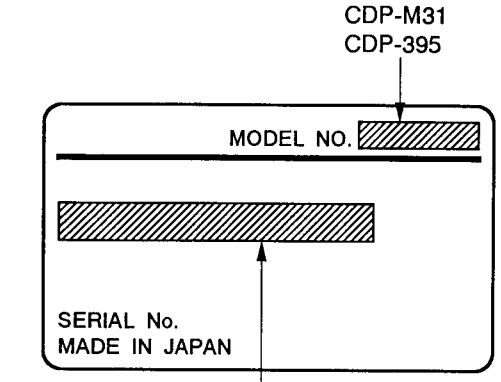
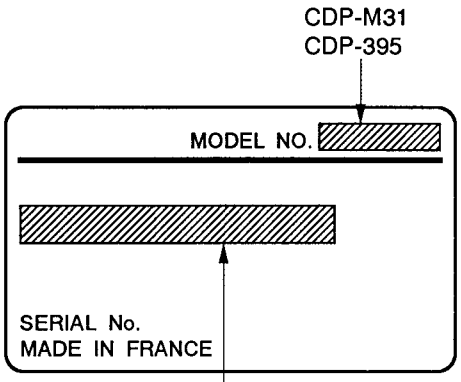
SECTION 1
SERVICING NOTES

MODEL IDENTIFICATION
– Specification Label –



AEP Model: AC: 220 – 230V~50/ 60Hz 12W
Australian Model: AC: 240V~50/60 Hz 12W
E Model: AC: 110 – 120 V, 220 – 240 V ~50/60 Hz 12W



AEP Model: AC: 220 – 230 V ~50/60Hz 12W

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25 cm away from the objective lens.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

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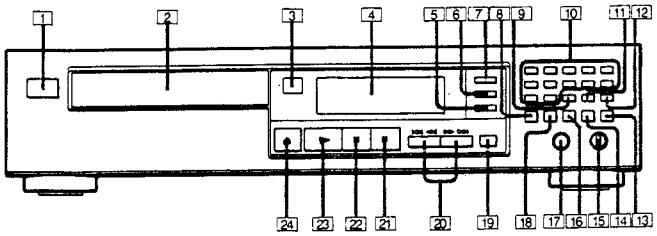
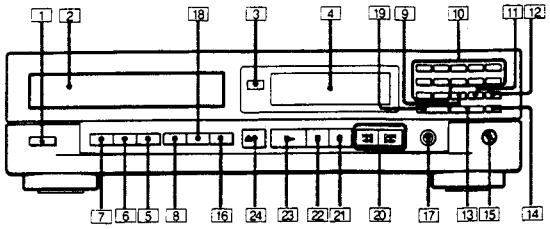
SECTION 2
GENERAL

Location of Controls

• FRONT PANEL



CDP-395

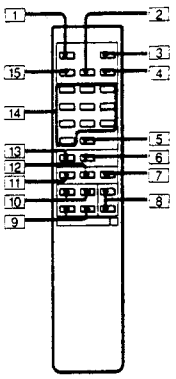


CDP-M31

[1] POWER switch
[2] Disc tray
[3] Remote sensor
[4] Display window
[5] PROGRAM button
[6] SHUFFLE button
[7] CONTINUE button
[8] TIME button
[9] CHECK (program check) button
[10] Numeric buttons
[11] CLEAR (program clear) button
[12] >12 (over 12) button
[13] MUSIC SCAN button
[14] PEAK SEARCH button (for CDP-395)
P.SEARCH button (for CDP-M31)
[15] LINE OUT/PHONE LEVEL control
[16] FADER button
[17] PHONES jack (for CDP-395)
HEADPHONES jack (for CDP-M31)
[18] REPEAT button
[19] EDIT/TIME FADE button
[20] ⏮ ◀◀/▶▶ ⏭ (AMS*/RMS**/manual search) buttons
[21] ■ (stop) button
[22] ❚❚ (pause) button
[23] ▶ (play) button
[24] ⏏ (open/close) button

* AMS is the abbreviation of Automatic Music Sensor.
** RMS is the abbreviation of Random Music Sensor.

• REMOTE COMMANDER



[1] M.SCAN (music scan) button
[2] SHUFFLE button
[3] FADER button
[4] PROGRAM button
[5] >10 (over 10) button
[6] REPEAT button
[7] ■ (stop) button
[8] LINE OUT LEVEL +/− buttons
[9] ◀◀ ▶▶ (manual search) buttons
[10] ⏮ ⏭ AMS buttons
[11] ▶ (play) button
[12] ❚❚ (pause) button
[13] TIME button
[14] Numeric buttons
[15] CONTINUE button

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SECTION 3
DISASSEMBLY OF BASE UNIT

Note :

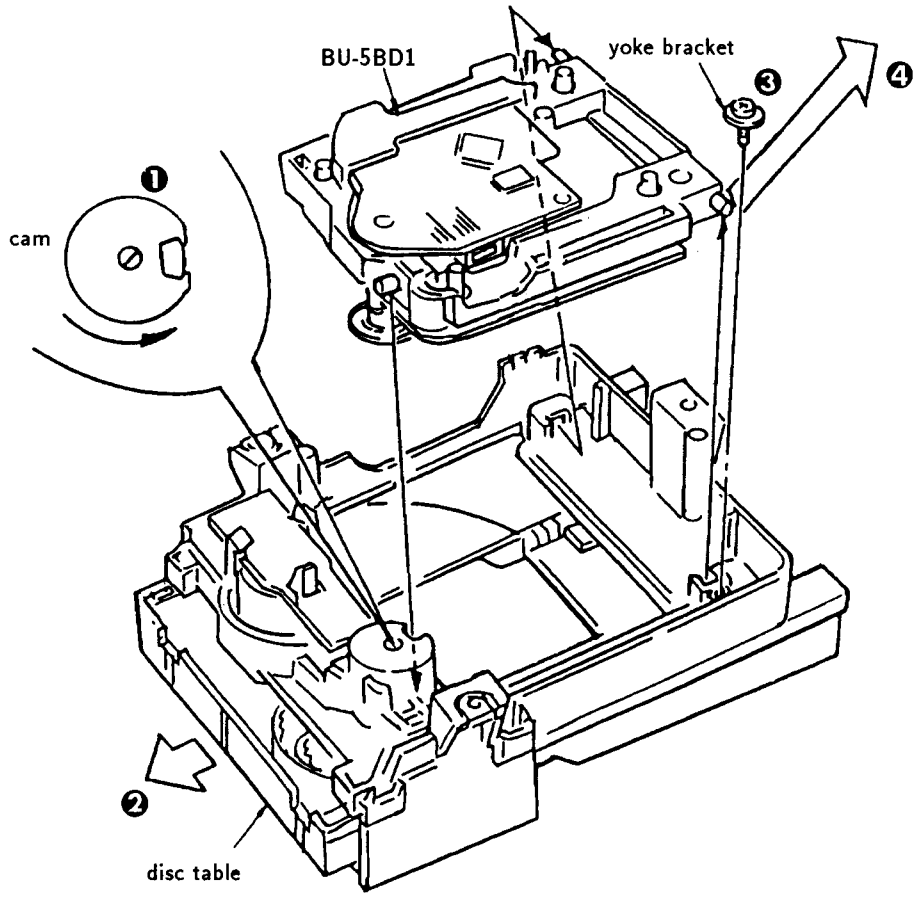
Follow the disassembly procedure in the nomerical order given.

❶ Turn the cam to the direction of arrow (Counter clock wise) by minus screw driver.

❷ Take off the disc table.

❸ Remove the yoke bracket.

❹ Remove the MD (BU-5BD1) to the direction of arrow.



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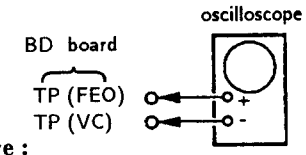
SECTION 4
ELECTRICAL BLOCK CHECKING

Note :

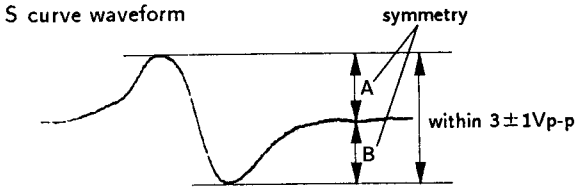
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :

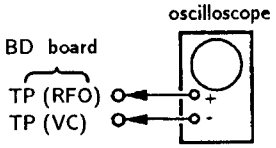
1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.



5. After check, remove the lead wire connected in step 2.

Note : • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

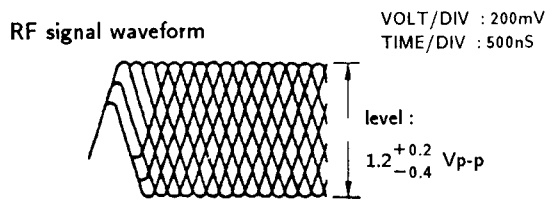


Procedure :

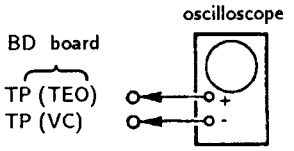
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

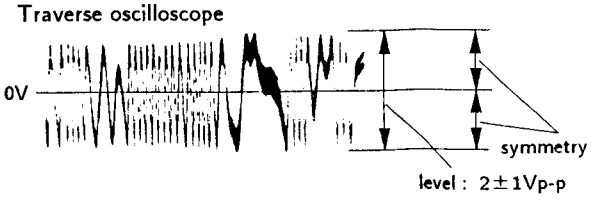


E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.



6. Remove the lead wire connected in step 1.

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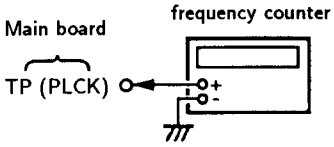
RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK) with lead wire.



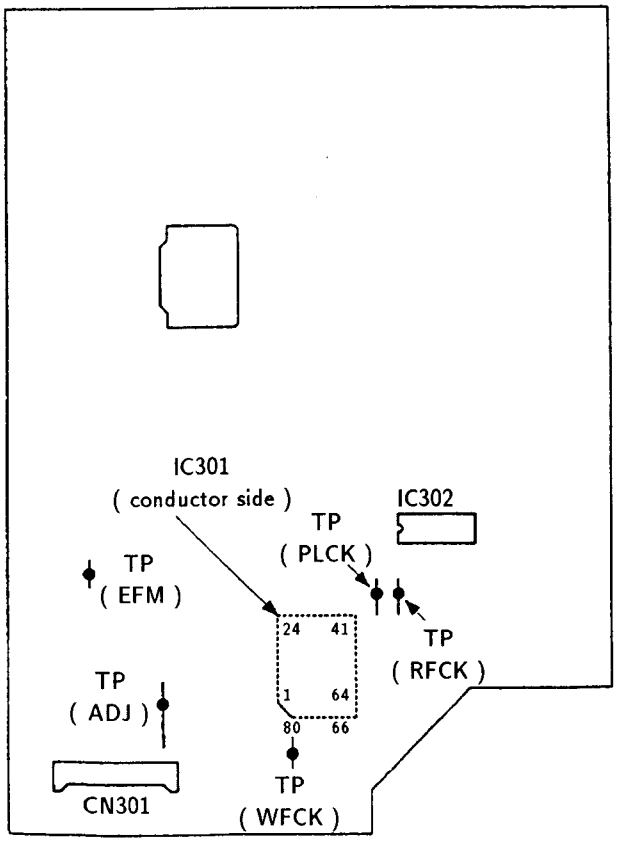
2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4. 3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off. There is no problem.
Therefore, do not perform, this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

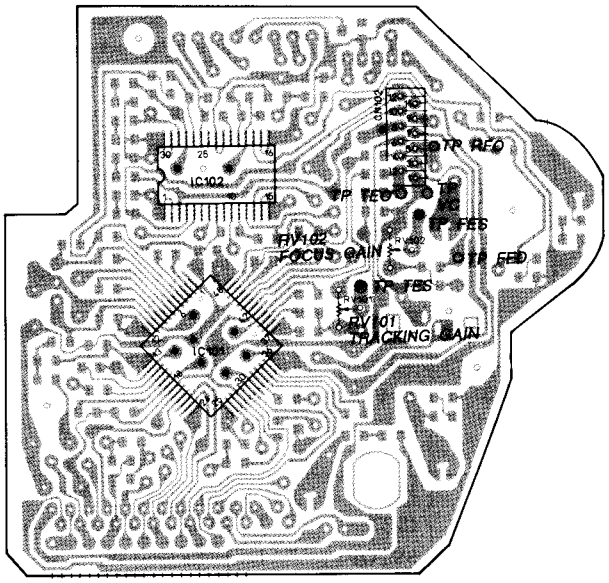
Adjustment Location ;

【MAIN BOARD】 – Component Side –



Adjustment Locations :
【BD board】

— conductor side —



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SECTION 5
DIAGRAMS

5-1. IC PIN FUNCTION AND IC BLOCK DIAGRAMS

• IC101 (CXA1372Q) PIN FUNCTION

Pin No.	Pin Name	I/O	Description
1	VC	—	GND when two (±) dual power supplies are in use, or the center voltage (2.5V) when a single power supply is in use.
2	FGD	I	Time constants for gain switching in normal mode/down mode and for focus gain are connected between the FGD and FS3 pins.
3	FS3	I	
4	FLB	I	The capacitor for low frequency boost in the focus servo loop is connected.
5	FEO	O	Focus drive output.
6	FE−	I	Inverted input to focus amplifier.
7	SRCH	I	Time constants to generate the focus search waveform are connected.
8	TGU	I	Time constants for gain switching in normal mode/up mode and for tracking gain are connected between TGU pin and TG2 pin.
9	TG2	I	
10	AVCC	—	Analog power supply (5V when ± dual power supplies are in use, 5V when a single power supply is in use.)
11	TAO	O	Tracking drive output.
12	TA−	I	Inverted input to tracking amplifier.
13	SL+	I	Non-inverted input to sled amplifier.
14	SLO	O	Sled drive output.
15	SL−	I	Non-inverted input to sled amplifier.
16	ESET	I	The 610kΩ phase compensator resistor is connected to this pin.
17	ISET	I	The current setting resistor is connected to this pin.
18	SSTOP	I	The limit switch is connected to this pin.
19	AVEE	—	Analog power supply (−5V when ± dual power supplies are in use, or GND when a single power supply is in use.)
20	DIRC	I	Direct control pin.
21	LOCK	I	Sled run-away prevention circuit operates when this signal is "L".
22	CLK	I	Serial data transfer clock input that is supplied from CPU (or DSP).
23	XLT	I	Latch input from CPU (or DSP).
24	DATA	I	Serial data input from CPU (or DSP).
25	XRST	I	System reset. "L" to reset.
26	C.OUT	O	Output to tracking counter.
27	SENS	O	SENS output.
28	DGND	—	Digital ground (GND). (GND when ± dual power supplies are in use. GND when a single power supply is in use.)
29	MIRR	O	Mirror output.
30	DFCT	O	Defect output. "H" when defective.
31	ASY	I	Auto-assymmetry control input.
32	EFM	O	EFM comparator output.
33	FOK	O	Focus OK.
34	CC2	I	Defect-bottom-hold input (input by capacitive coupling).
35	CC1	O	Defect-bottom-hold output.
36	DVCC	—	Digital power supply. (+5V when ± dual power supplies in use. +5V when a single power supply is in use.)
37	CB	I	The defect-bottom-hold capacitor is connected to this pin.
38	CP	I	The mirror hold capacitor is connected to this pin.
39	RF1	I	RF signal input (input by capacitive coupling).
40	RF0	I	RF signal input (input by DC coupling).
41	DVEE	—	Digital power supply (−5V when ± dual power supplies are in use. GND when a single power supply is in use.)
42	TZC	I	Tracking zero-cross comparator input.
43	TE	I	Tracking error input.
44	TDFCT	I	The defect prevention hold capacitor is connected to this pin.
45	ATSC	I	Anti-shock input.
46	FZC	I	Focus zero-cross comparator input.
47	FE	I	Focus error input.
48	FDFCT	I	The defect prevention hold capactior is connected to this pin.

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● IC401 (CXP50112-097Q) PIN FUNCTION

Pin No.	Pin Name	I /O	Description
1 - 4	—	—	Not used (open).
5 - 20	S1 -S16	O	Segment output to FL tube.
21 - 28	1G - 8G	O	Common output to FL tube.
29	SCOR	I	Subcode sync signal S0 + S1 detection input from IC301 (CXD2500AQ).
30	—	—	Not used (open).
31	+5V	—	+5V
32	$\overline{\text{RST}}$	I	Reset input.
33	+5V	—	+5V
34	V_{DD}	—	Power voltage terminal (+5V).
35 - 40	KEY0 - KEY5	I	Key A/D input.
41	—	—	Not used (Ground).
42	TIMER SW	I	Auto play select input (Auto play "L").
43	—	—	Not used (Ground).
44	CLK	O	Serial data transfer clock output to IC301 (CXD2500AQ).
45	DATA	O	Serial data output to IC301 (CXD2500AQ).
46	—	—	Not used (Ground).
47	FOK	I	Focus OK signal input from IC101 (CXA1372Q).
48	GFS	I	Frame sync signal clock status input from IC301 (CXD2500AQ).
49	SUBQ	I	Subcode (Q data) serial input from IC301 (CXD2500AQ).
50	SQCLK	O	Subcode (Q data) readout clock output to IC301 (CXD2500AQ).
51	XLT	O	Serial data latch output.
52	PRGL	O	Attenuate data latch clock output to IC302 (CXD2554P).
53	LDON	O	Laser diode ON/OFF select output of optical pick-up.
54	AMUT	O	Muting output for IC301 (CXD2500AQ) and Q344 (2SC3399). Muting on by "H", Muting off by "L".
55 - 58	B0 - B3	—	Not used (Ground)
59	DEFECT SW	O	Deffect circuit ON/OFF select output to IC101 (CXA1372Q).
60	—	—	Not used (open).
61	SENSE	I	SENS signal input from IC301 (CXD2500AQ).
62	RMC	I	Remote control signal input.
63	$\overline{\text{INSW}}$	I	Input for loading out switch.
64	$\overline{\text{OUTSW}}$	I	Output for loading in switch.
65	ADJ	I	Test mode input. GFS check will not activate by "L".
66	AFADJ	I	Test mode input. All test operation will be activate by "L" mode when power on.
67	LODIN	O	Output for turn the loading motor to loading.
68	LODOUT	O	Output for turn the loading motor to unloading.
69	LED	O	Output for motor volume LED lighting.
70	—	—	Not used (open).
71	V_{SS}	—	Ground.
72	XTAL	O	Clock output.
73	+5V	—	+5V
74	EXTAL	I	Clock input. (4MHz)
75	+5V	—	+5V
76	−30V	I	Power voltage −30V for built in FL tube controller.
77	—	O	Not used (open).
78	—	O	Not used (open).
79	VDL DOWN	O	Output for motor volume down.
80	VOL UP	O	Output for motor volume up.

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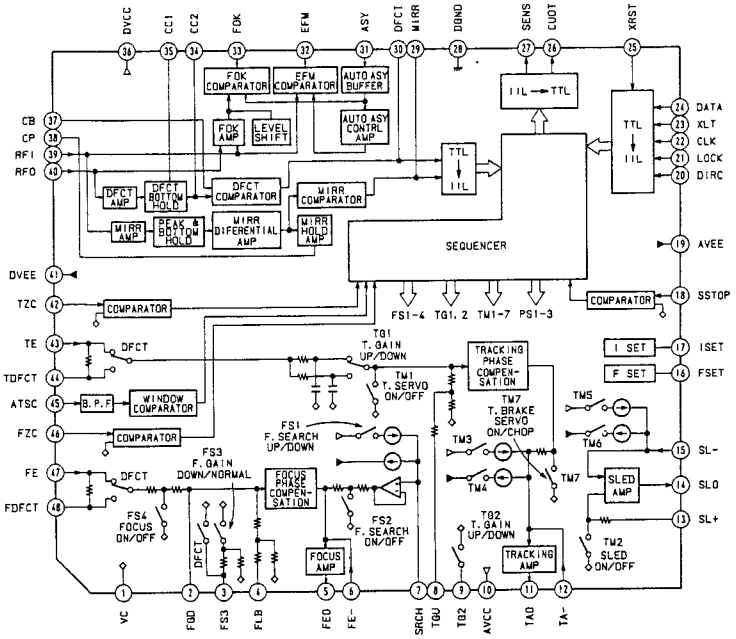
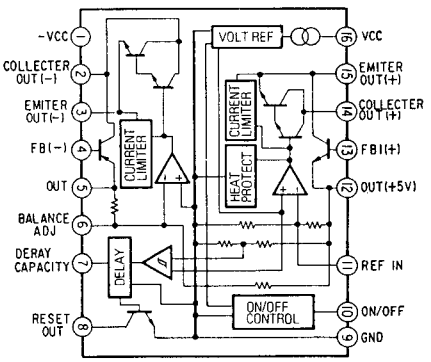
• IC Block Diagrams

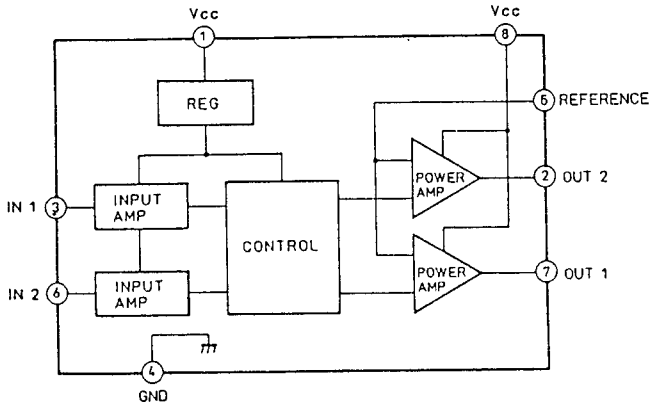
IC101 CXA1372Q



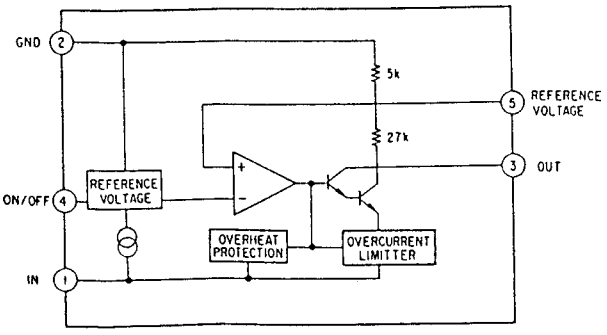
IC202 M5290P-16



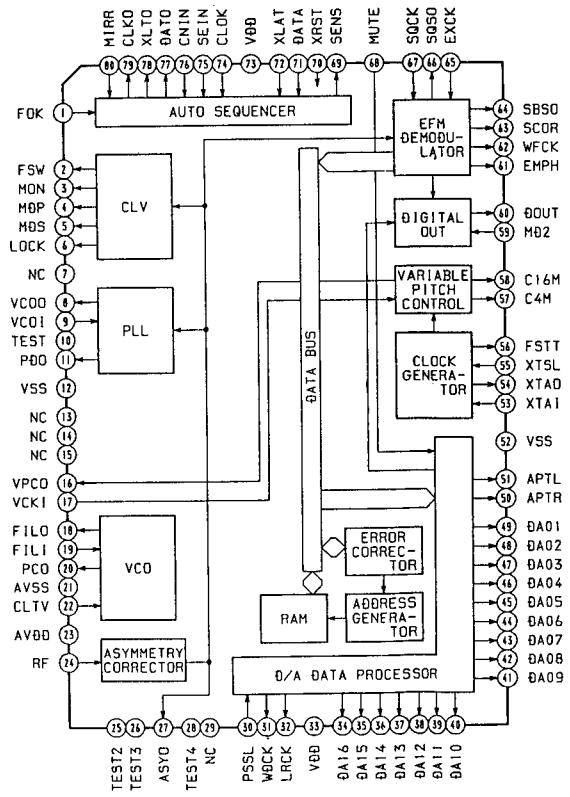
IC103 M54641L



IC201 M5293L



IC301 CXD2500AQ



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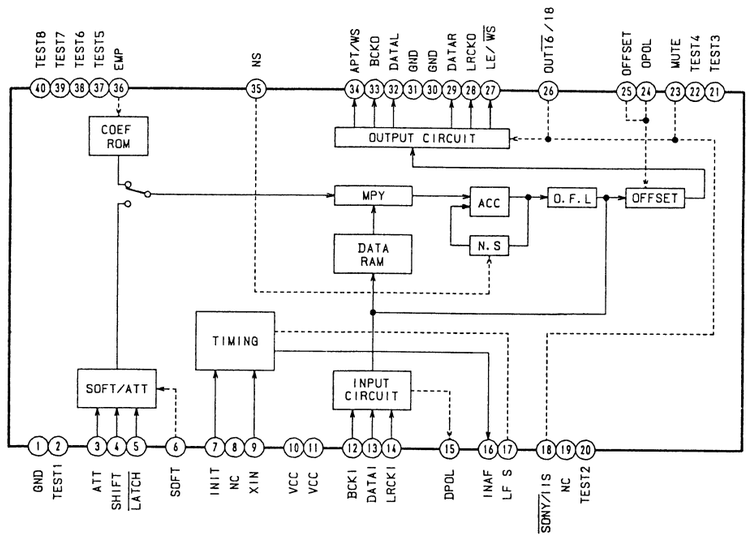
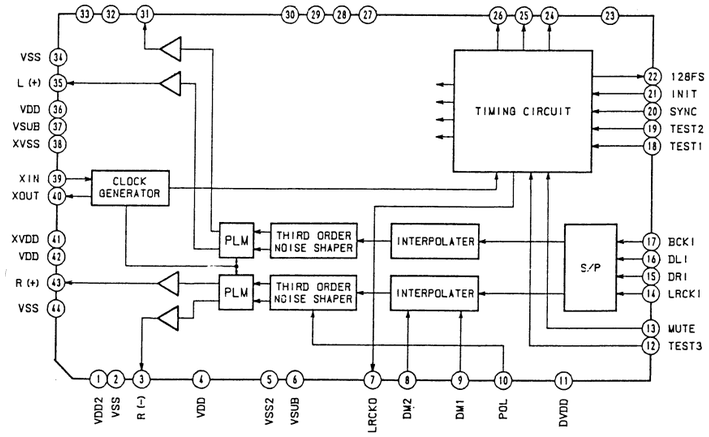
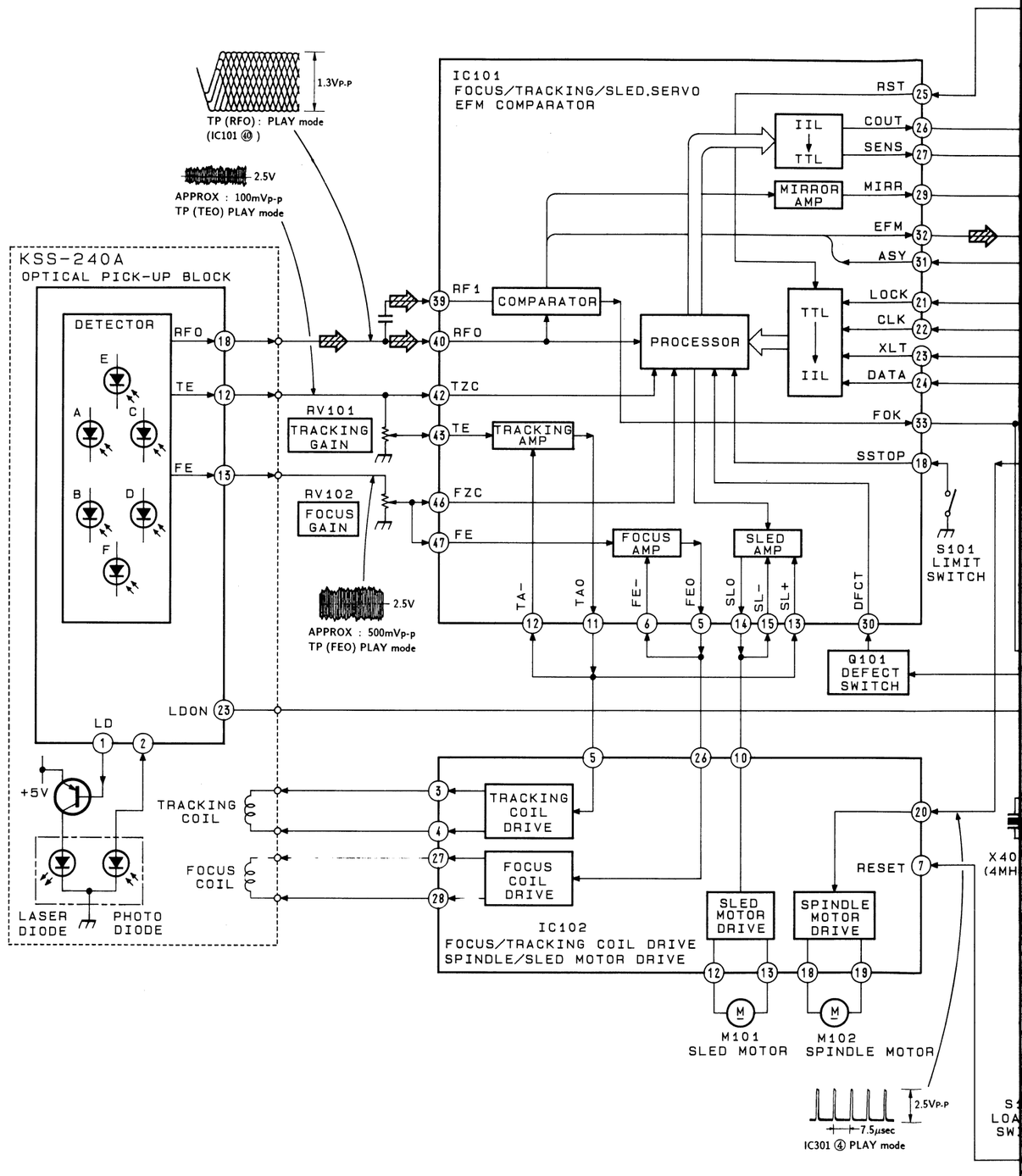
IC302 CXD1244S



IC305 CXD2552Q



5-2. BLOCK DIAGRAM



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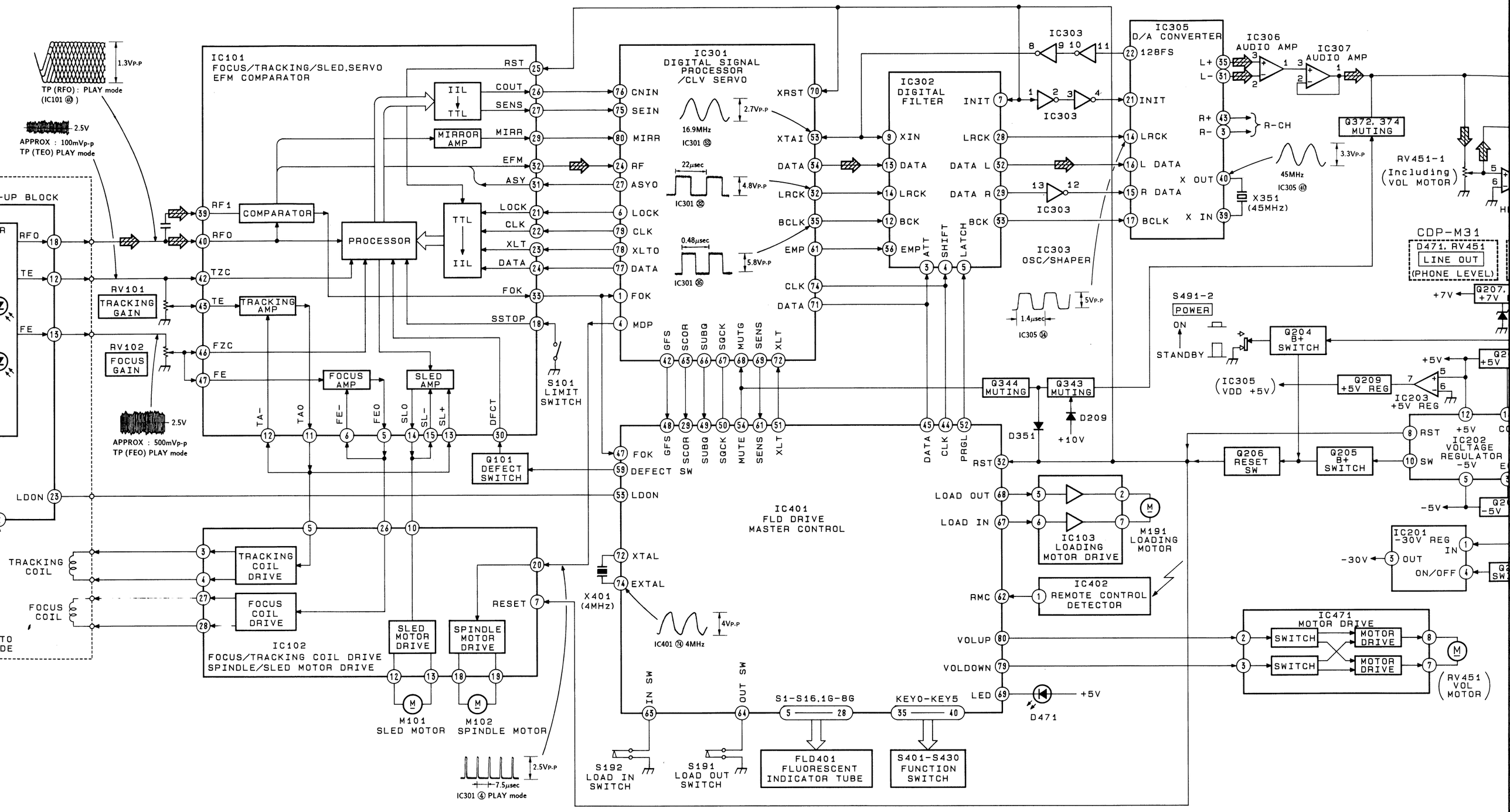

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IC301
DIGITAL SIGNAL
PROCESSOR
/CLV SERVO

IC302
DIGITAL
FILTER

IC303

IC305
D/A CONVERTER

IC306
AUDIO AMP

IC307
AUDIO AMP

IC303
OSC/SHAPER

IC401
FLD DRIVE
MASTER CONTROL

IC103
LOADING
MOTOR DRIVE

IC402
REMOTE CONTROL
DETECTOR

IC471
MOTOR DRIVE

IC451
HEADPHONE
AMP

IC203
+5V REG

IC202
VOLTAGE
REGULATOR

IC201
-30V REG

Q207, 208
+7V REG

Q204
B+
SWITCH

Q203
+5V REG

Q209
+5V REG

Q344
MUTING

Q343
MUTING

Q372, 374
MUTING

Q206
RESET
SW

Q205
B+
SWITCH

Q202
-5V REG

Q201
SWITCH

D203-206
RECT

D207

D209

D351

D471

M191
LOADING
MOTOR

RV451-1
(Including
VOL MOTOR)

RV451
VOL
MOTOR

X351
(45MHz)

S491-2
POWER

S491-1
POWER

S201
VOLTAGE
SELECTOR

S191
LOAD OUT
SWITCH

FIXED

VARIABLE

J381
LINE OUT

J481

HEADPHONES

PHONES

CDP-M31

CDP-395

D471, RV451
LINE OUT
(PHONE LEVEL)

D471, RV451
PHONES LEVEL

T901
POWER
TRANSFORMER

EXCEPT
E MODEL

E MODEL

AC IN

220-240V

110-120V

TO FLD401

FLD401
FLUORESCENT
INDICATOR TUBE

S401-S430
FUNCTION
SWITCH

S1-S16,1G-8G

KEY0-KEY5

2.7Vp-p
16.9MHz
IC301 ㊺

22μsec
4.8Vp-p
IC301 ㊷

0.48μsec
5.8Vp-p
IC301 ㊽

3.3Vp-p
45MHz
IC305 ㊵

5Vp-p
1.4μsec
IC305 ㊱

4Vp-p
IC401 ㊼ 4MHz

+7V
+10V
+5V
-5V
-10V
-30V

STANDBY
ON

(IC305
VDD +5V)

R-CH

XRST
XTAI
DATA
LRCK
BCLK
EMP
CLK
DATA

XIN
DATA
LRCK
BCK
EMP

INIT
LRCK
DATA L
DATA R
BCK

128FS
INIT
LRCK
L DATA
R DATA
BCLK

L+
L-
R+
R-
X OUT
X IN

ATT
SHIFT
LATCH

GFS
SCOR
SUBQ
SQCK
MUTG
SENS
XLT

DATA
CLK
PRGL

RST
LOAD OUT
LOAD IN
RMC
VOLUP
VOLDOWN
LED

RST
SW
+5V
CO+
EO-

IN SW
OUT SW

F2
F1

• Semiconductor Lead Layouts

CXA1372Q

(TOP VIEW)

CXD2500AQ
CXP50112-097Q

CXD2552Q

GP1 μ 52XB

DTA144ES
DTC144ES
2SC2458-YGR
2SC3623A-LK

2SA1175-HFE

2SB1094-L
2SB1274SA-RS

2SC1815-Y

2SD774-34

RD4.7M-B1

RD5.6ES-B2
RD6.8ES-B1
RD7.5JS-B2
1SS202-1
11ES2
11EQS04

IN4148M

BR4361F

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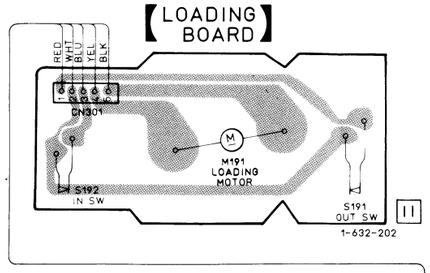
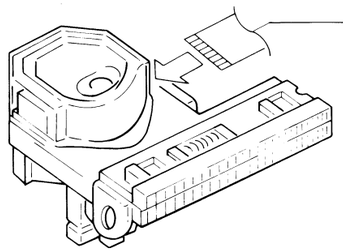
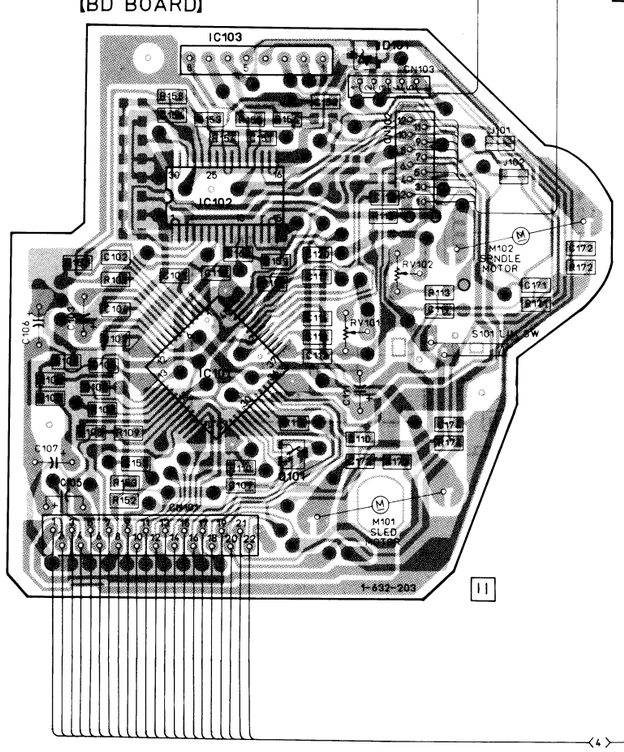
【LOADING BOARD】



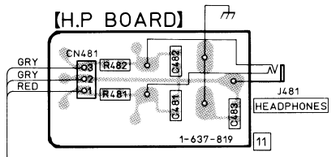
OPTICAL
PICK-UP BLOCK
KSS-240A



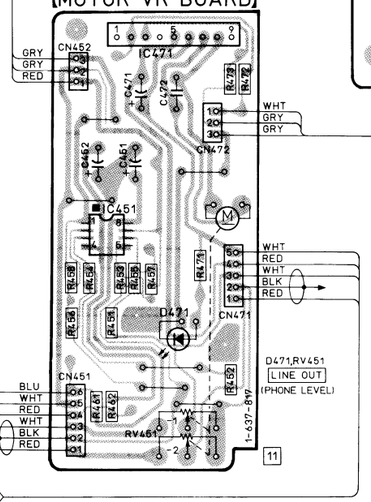
【BD BOARD】



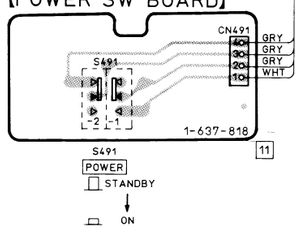
【H.P BOARD】



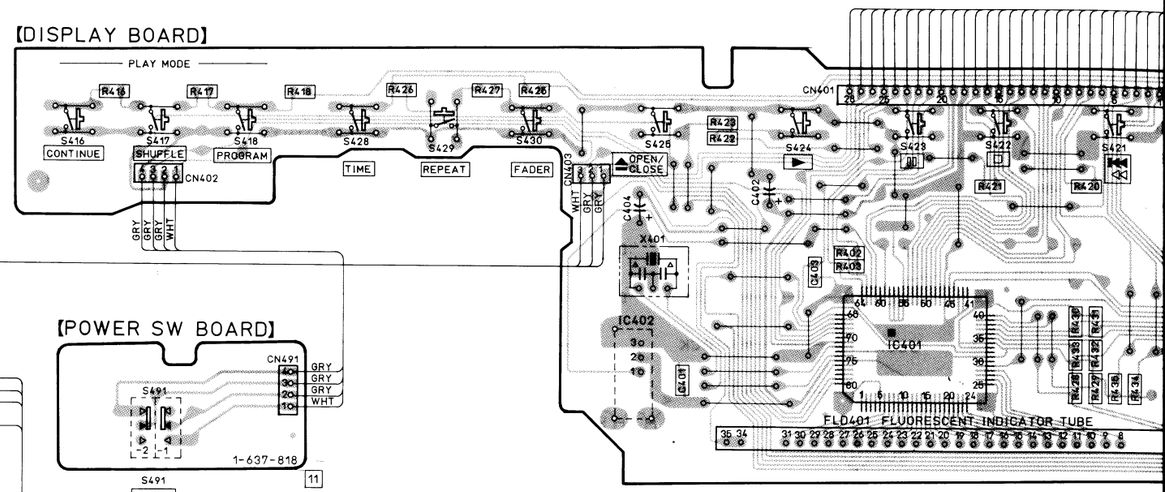
【MOTOR VR BOARD】



【POWER SW BOARD】

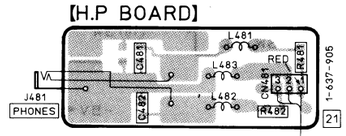


【DISPLAY BOARD】

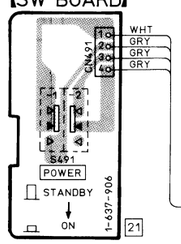


CDP-M31 MODEL

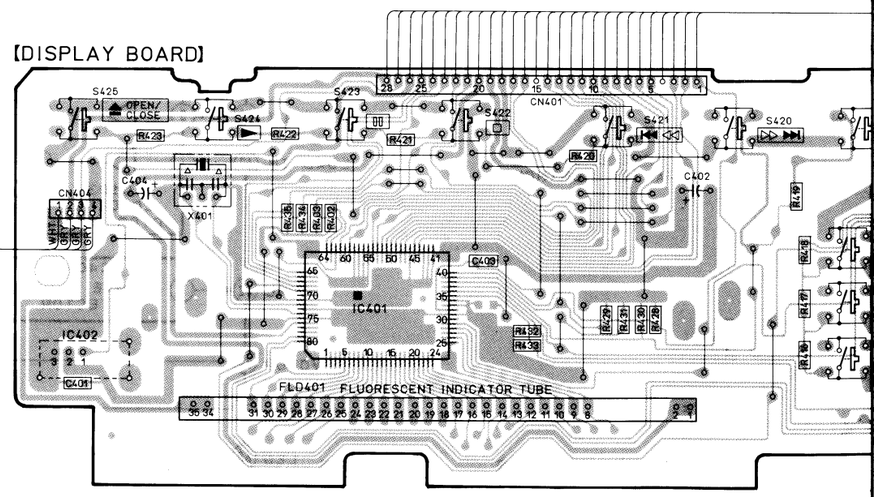
【H.P BOARD】



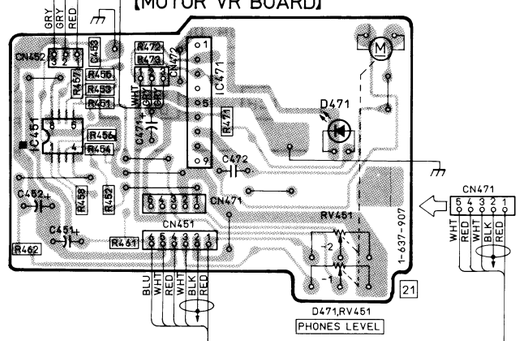
【POWER SW BOARD】



【DISPLAY BOARD】



【MOTOR VR BOARD】



CDP-395 MODEL

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【DISPLAY BOARD】

PLAY MODE

S416 CONTINUE
S417 SHUFFLE
S418 PROGRAM
S428 TIME
S429 REPEAT
S430 FADER
CN402
CN403
S425 OPEN/CLOSE
S424
S423
S422
S421
S420
CN401
X401
IC402
IC401
FLD401 FLUORESCENT INDICATOR TUBE
S419 EDIT/TIME FADE
S414 MUSIC SCAN
S415 P.SEARCH
S411 S412 S426 CHECK S427 CLEAR S413 >12
S406 S407 S408 S409 S410
S401 S402 S403 S404 S405
1-637-816 11

【POWER SW BOARD】

CN491
S491
1-637-818 11
S491 POWER
STANDBY
ON

CDP-M31 MODEL

【POWER SW BOARD】

CN491 WHT GRY GRY GRY
S491 POWER
STANDBY
ON
1-637-906 21

【DISPLAY BOARD】

S425 OPEN/CLOSE
S424
S423
S422
S421
S420
CN401
CN403
S419 EDIT/TIME FADE
S418 PROGRAM
S417 SHUFFLE
S416 CONTINUE
CN404
X401
IC402
IC401
FLD401 FLUORESCENT INDICATOR TUBE
S428 S429 S430 S415 S414
S411 S412 S426 S427 S413
S406 S407 S408 S409 S410
S401 S402 S403 S404 S405
1-637-904 21

【RD】

D471
RV451
CN471
1-637-907
D471,RV451 PHONES LEVEL

CDP-395 MODEL

S428 TIME
S429 REPEAT
S430 FADER
S415 PEAK SEARCH
S414 MUSIC SCAN
S411 S412 S426 CHECK S427 CLEAR S413 >12
S406 S407 S408 S409 S410
S401 S402 S403 S404 S405

【MAIN BOARD】

J381 LINE OUT
FIXED L R
VARIABLE L R
EXCEPT E MODEL
IC306
IC303
IC302
IC203
IC202
IC301
IC401
Q373 Q371 Q374 Q372 Q343 Q344 Q203 Q202 Q206 Q205
D351 D341 D209 D208 D207 D204 D205
CN382 CN381 CN301
RS302
L331
X351
(IREF) (IPLCK) (MUTE) (MDP) (WFCK) (AF ADJ)

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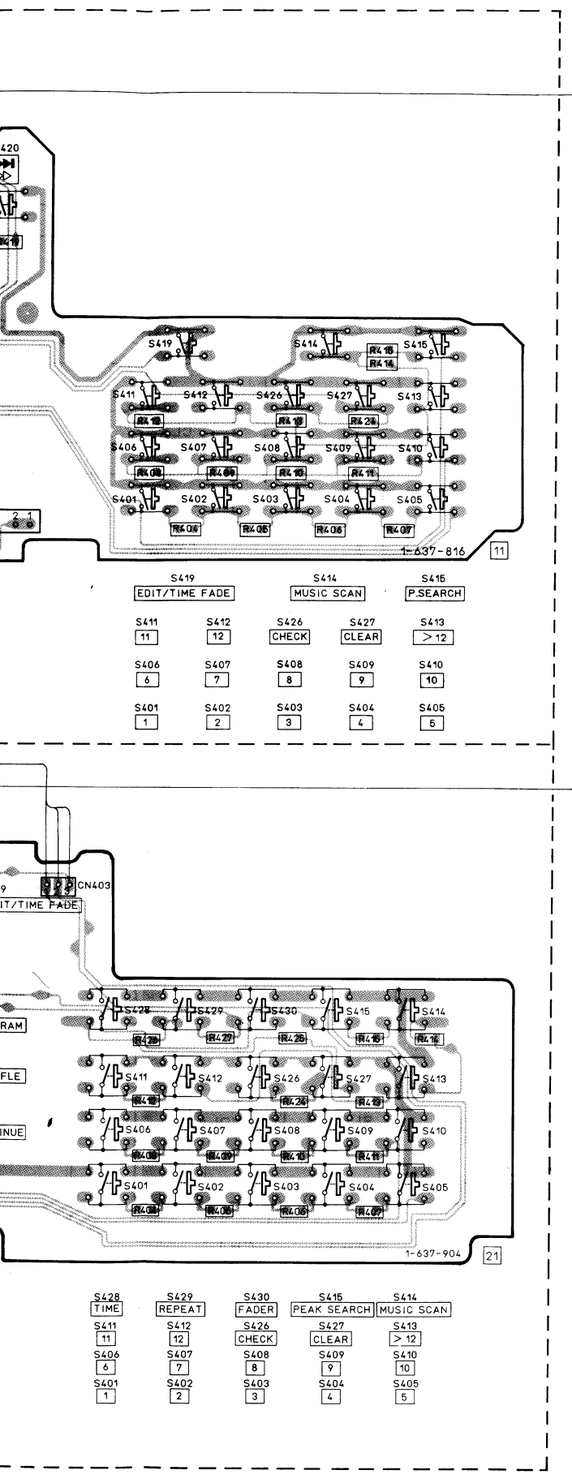
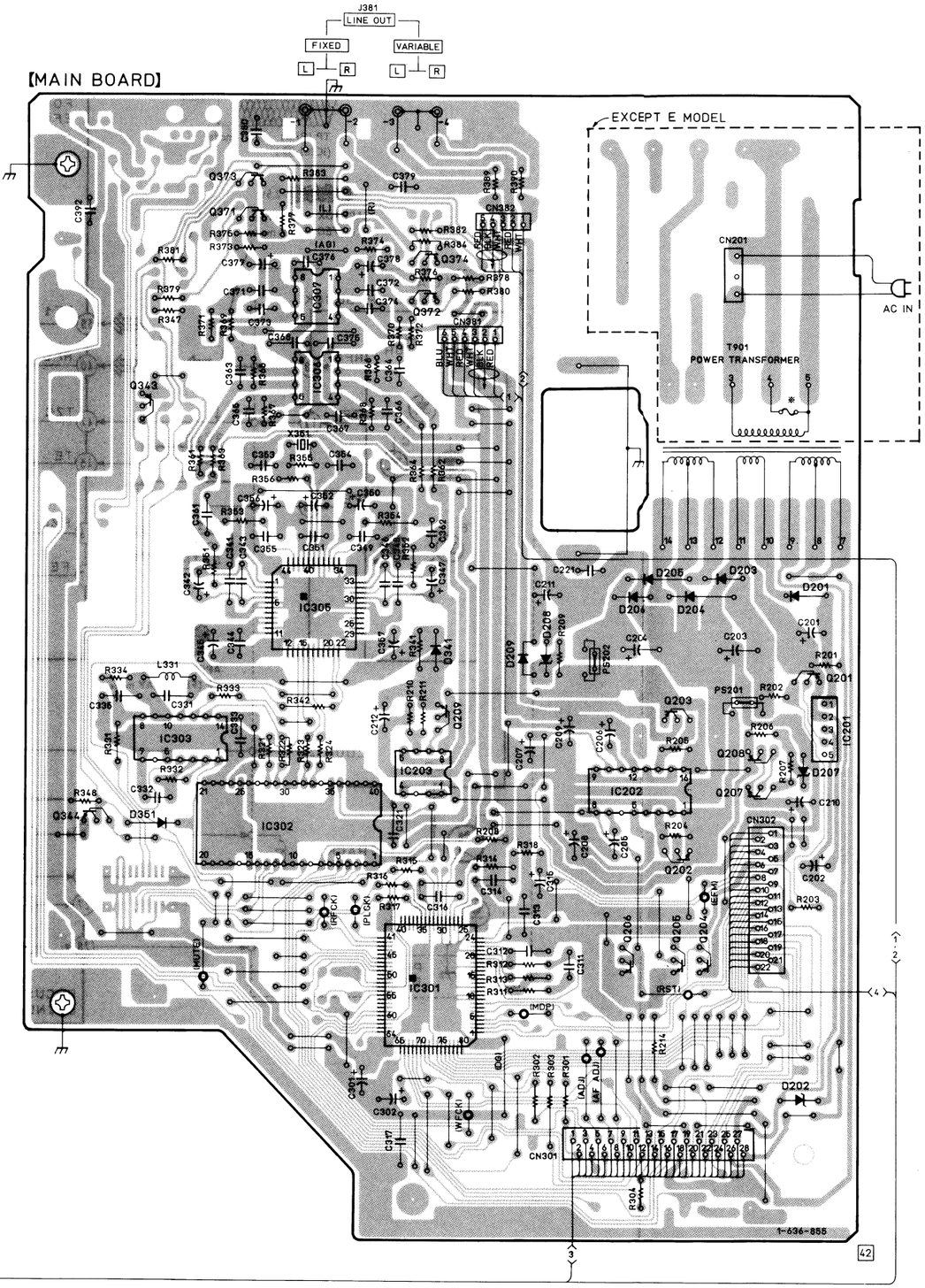
[MAIN BOARD]





Note on Printed Wiring Board:
Note:

- ○——— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒ : Pattern on the side which is seen.
- ▒ : Pattern of the rear side.

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WAVEFORMS

❶ 1.3Vp-p
TP (RFO) : PLAY mode
(IC101 ㊵)

❷ 2.5V
APPROX : 500mVp-p
TP (FEO) PLAY mode

❸ 2.5V
APPROX : 100mVp-p
TP (TEO) PLAY mode

❹
IC401 ㉞ 4MHz

- **Semiconductor Location**

Ref. No.	Location
D101	G-3
D201	F-27
D202	J-27
D203	F-26
D204	F-26
D205	F-26
D206	F-26
D207	G-27
D208	F-25
D209	F-25
D341	F-24
D351	H-21
D471	E-7 (M31)
D471	I-9 (395)
IC101	I-2
IC102	H-2
IC103	G-3
IC201	G-27
IC202	H-26
IC203	G-24
IC301	I-24
IC302	H-23
IC303	H-22
IC305	F-23
IC306	D-23
IC307	D-23
IC401	D-14 (M31)
IC401	I-13 (395)
IC402	D-12 (M31)
IC402	I-10 (395)
IC451	D-6 (M31)
IC451	I-7 (395)
IC471	C-7 (M31)
IC471	I-8 (395)
Q101	I-3
Q201	G-27
Q202	H-26
Q203	G-26
Q204	I-26
Q205	I-26
Q206	I-25
Q207	H-26
Q208	G-26
Q209	G-24
Q343	D-22
Q344	H-21
Q371	C-22
Q372	D-24
Q373	C-22
Q374	C-24

[DISPLAY BOARD]

FLD401
FLUORESCENT
INDICATOR TUBE

IC402
GP1U52XB
REMOTE CONTROL
RECEIVER

IC401
CXP50112-097Q
SYSTEM CONTROL

CN401 28P
CN402 4P
CN403 3P

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2.5V
OX : 500mVp-p
EO) PLAY mode

❸ 2.5V
APPROX : 100mVp-p
TP (TEO) PLAY mode

❹ 4VP-P
IC401 ⑭ 4MHz

❺ 2.5VP-P
7.5μsec
IC301 ④ PLAY mode

❻ 22μsec 4.8VP-P
IC301 ㉜

❼ 0.48μ
IC301 ㉝

【BD BOARD 】

IC101
CXA1372Q
FOCUS/TRACKING
/SLED SERVO
EFM COMPARATOR

IC102
LA6532M
FOCUS/TRACKING COIL DRIV
SPINDLE/SLED MOTOR DRIV

Q101
DTC144EK
DEFECT SWITCH

IC401
50112-097Q
EM CONTROL

IC402
GP1U52XB
REMOTE CONTROL
RECEIVER

【POWER SW BOARD】 CDP-395 MODEL
S491 POWER STANDBY
ON

【POWER SW BOARD】 CDP-M31 MODEL
S491 POWER
ON
STANDBY

【MOTOR VR BOARD】 CDP-395 MODEL

IC451
RC4556MA
HEADPHONE
AMP

IC471
BA6208
MOTOR DRIVE

CDP-M31 MODEL
D471,RV451
LINE OUT
(PHONE LEVEL)
D471,RV451
PHONES LEVEL
CDP-395
MODEL

【MAIN BOARD】

S405 5 | S410 10 | S415 P.SEARCH | S420 ▶▶ | S425 △ OPEN/ CLOSE | S430 FADER
S404 4 | S409 9 | S414 MUSIC SCAN | S419 EDIT/ TIME FADE | S424 ▶ | S429 REPEAT
S403 3 | S408 8 | S413 >12 | S418 PROGRAM | S423 ▮▮ | S428 TIME
S402 2 | S407 7 | S412 12 | S417 SHUFFLE | S422 □ | S427 CLEAR
S401 1 | S406 6 | S411 11 | S416 CONTINUE | S421 ▶▶/◀◀ | S426 CHECK
PLAY MODE

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6
22μsec
4.8VP-P
IC301 ㉜

7
0.48μsec
5.8VP-P
IC301 ㉟

8
2.7VP-P
16.9MHz
IC301 ㊸

9
5VP-P
1.4μsec
IC305 ⑭

10
3.3VP-P
45MHz
IC305 ㊵

⚠OPTICAL PICK UP BLOCK KSS-240A

EXCEPT E

IC102
LA6532M
FOCUS/TRACKING COIL DRIVE
SPINDLE/SLED MOTOR DRIVE

IC200
M52103FP
DETECTOR RF AMP

IC103
M54641L
LOADING MOTOR DRIVE

IC201
M5293L
-30V REG

IC202
M5290P-16
VOLTAGE REGULATOR

IC203
RC4558P
B+ SWITCH

IC301
CXD2500AQ
DIGITAL SIGNAL PROCESSOR

IC302
CXD1244S
DIGITAL FILTER

IC303
SN74HCU04AN
OSC/SHAPER

IC305
CXD2552Q
D/A CONVERTER

IC306
TL082CP
AUDIO AMP

T901
POWER TRANSFORMER

M102 SPINDLE MOTOR
M101 SLED MOTOR
M151 LOADING MOTOR

LOADING BOARD
S191 LOAD OUT SWITCH
S192 LOAD IN SWITCH
S101 LIMIT IN SWITCH

Q202 -5V REG
Q203 +5V REG
Q204-206 B+ SWITCH
Q207,208 +7V REG
Q344 MUTING
Q351 MUTING SWITCH

D203-206 RECT

CDP-M31
H.P BOARD
J481 HEADPHONES

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Note on Schematic Diagram:

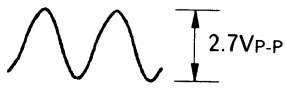
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

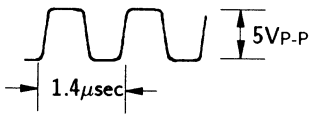
- ▬▬ : B + Line.
- ▬ ▬ : B − Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : STOP
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Wavefroms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to wavefroms.
- Signal path.
  ⇨ : CD

8



16.9MHz
IC301 ㊸

9



IC305 ⑭

10

45MHz
IC305 ㊵

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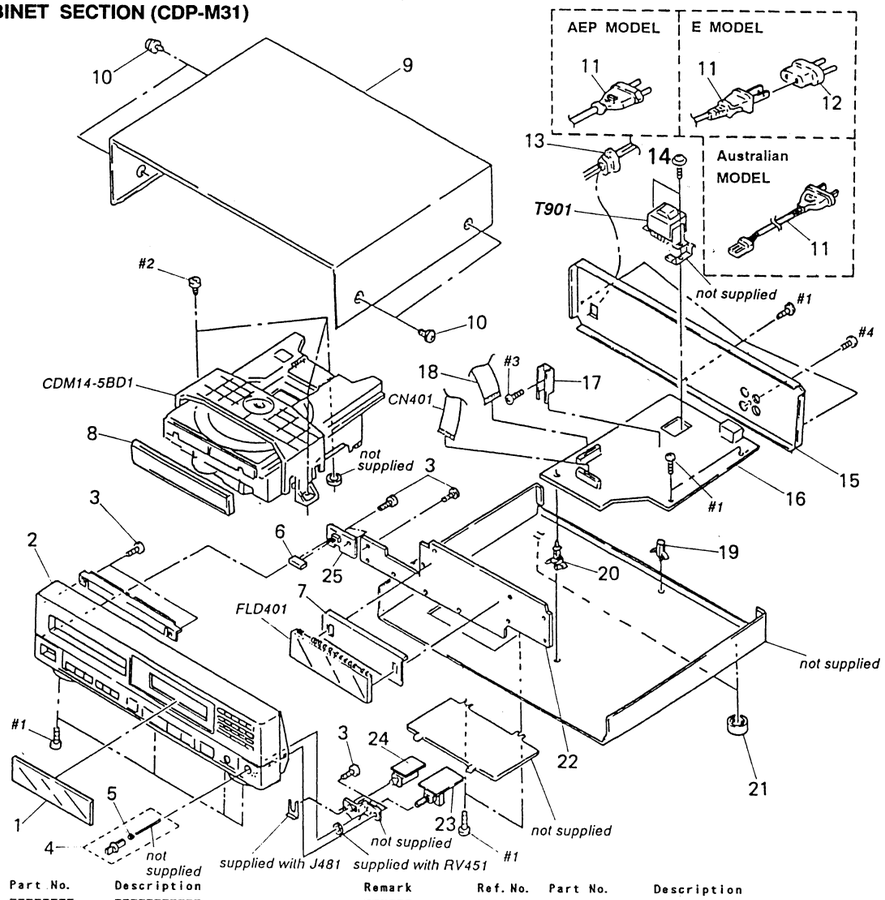
SECTION 6 EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

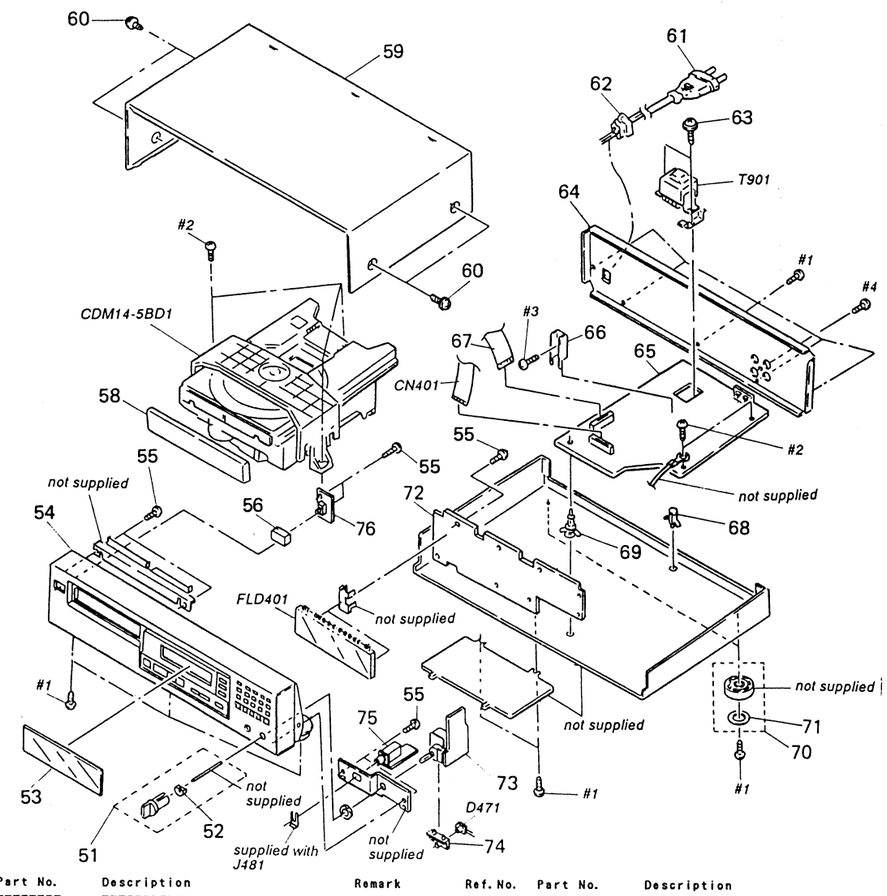
(1) CABINET SECTION (CDP-M31)



Ref. No.		Part No.	Description	Remark
1		4-942-977-01	PLATE, INDICATION	
1		4-942-983-01	PLATE, INDICATION (TYPE-B) (M31:E, Australian)	
2		X-4941-317-1	PANEL ASSY, FRONT (M31:AEP)	
2		X-4941-323-1	PANEL ASSY, FRONT (M31:E, Australian)	
3		4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
4		A-4604-727-A	KNOB (HP) ASSY	
5		4-922-979-01	INDICATOR	
6		4-927-341-01	BUTTON (POWER) (M31)	
7	*	4-923-103-01	HOLDER, FL TUBE (M31)	
8		4-942-979-01	PANEL, LOADING (M31:AEP)	
8		4-942-979-41	PANEL, LOADING (M31:E, Australian)	
9		4-919-376-31	CASE	
10		3-704-366-01	SCREW (CASE) (M3X8)	
11	⚠	1-574-127-31	CORD, POWER (MADE IN FRANCE:AEP)	
11	⚠	1-574-358-31	CORD, POWER (WITH CONNECTOR) (Australian)	
11	⚠	1-575-651-21	CORD, POWER (MADE IN JAPAN:AEP)	
11	⚠	1-575-653-21	CORD, POWER (E)	
12	⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (M31:E)	
13	*	3-703-244-00	BUSHING (2104), CORD	
14		4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
15		4-941-552-21	PANEL (ALSACE), BACK (MADE IN FRANCE M31)	
15	*	4-942-980-01	PANEL, BACK (MADE IN JAPAN M31:AEP)	
15	*	4-942-980-11	PANEL, BACK (MADE IN JAPAN M31:Australian)	
15	*	4-942-980-21	PANEL, BACK (MADE IN JAPAN M31:E)	
16	*	A-4617-688-A	MAIN BOARD, COMPLETE (MADE IN FRANCE M31)	
16	*	A-4617-701-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M31:AEP, Australian)	
16	*	A-4617-703-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M31, E)	
17		4-902-345-01	HEAT SINK	
18		1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
19	*	3-349-025-41	HOLDER, PC BOARD	
20	*	4-924-098-31	HOLDER, PC BOARD	
21		4-933-601-01	FOOT	
22	*	A-4617-686-A	DISPLAY BOARD, COMPLETE (MADE IN FRANCE M31)	
22	*	A-4617-774-A	DISPLAY BOARD, COMPLETE (MADE IN JAPAN M31:AEP)	
23	*	1-637-817-11	MOTOR VR BOARD (MADE IN JAPAN M31)	
23	*	1-637-817-21	MOTOR VR BOARD (MADE IN FRANCE M31)	
24	*	1-637-819-11	HP BOARD (MADE IN JAPAN M31)	
24	*	1-637-819-21	HP BOARD (MADE IN FRANCE M31)	
25	*	1-637-818-11	POWER SW BOARD (MADE IN JAPAN M31)	
25	*	1-637-818-21	POWER SW BOARD (MADE IN FRANCE M31)	
CN401		1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
FLD401		1-519-611-11	INDICATOR TUBE, FLUORESCENT	
T901	⚠	1-449-922-11	TRANSFORMER, POWER (MADE IN JAPAN M31:AEP, Australian)	
T901	⚠	1-449-923-11	TRANSFORMER, POWER (M31:E)	
T901	⚠	1-449-925-11	TRANSFORMER, POWER (MADE IN FRANCE M31:AEP)	

(2) CABINET SECTION (CDP-395)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



Ref. No.		Part No.	Description	Remark
51		A-4604-727-A	KNOB (HP) ASSY	
52		4-922-979-01	INDICATOR	
53		4-942-767-01	PLATE, INDICATION (395)	
54		X-4941-256-1	PANEL ASSY, FRONT (MADE IN JAPAN 395:AEP)	
54		X-4941-257-1	PANEL ASSY, FRONT (MADE IN FRANCE 395:AEP)	
55		4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
56		4-922-921-02	BUTTON (POWER) (395)	
58		4-942-763-01	PANEL, LOADING (MADE IN JAPAN 395:AEP)	
58		4-942-763-11	PANEL, LOADING (MADE IN FRANCE 395)	
59		4-929-035-31	CASE (MADE IN JAPAN 395)	
59		4-929-035-41	CASE (MADE IN FRANCE 395)	
60		3-704-366-01	SCREW (CASE) (M3X8)	
61	⚠	1-574-127-31	CORD, POWER (MADE IN FRANCE 395:AEP)	
61	⚠	1-575-651-21	CORD, POWER (MADE IN JAPAN 395:AEP)	
62	*	3-703-244-00	BUSHING (2104), CORD	
63		4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
64		4-942-768-21	PANEL, BACK (MADE IN JAPAN 395:AEP)	
64		4-942-768-51	PANEL (ALSACE), BACK (MADE IN FRANCE 395:AEP)	
65	*	A-4617-688-A	MAIN BOARD, COMPLETE (MADE IN FRANCE 395:AEP)	
65	*	A-4617-701-A	MAIN BOARD, COMPLETE (MADE IN JAPAN 395)	
66		4-902-345-01	HEAT SINK	
67		1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
68	*	3-349-025-41	HOLDER, PC BOARD	
69	*	4-924-098-31	HOLDER, PC BOARD	
70		X-3304-938-2	FOOT, ASSY (395)	
71		4-923-836-11	CUSHION (395)	
72	*	A-4617-700-A	DISPLAY BOARD, COMPLETE (MADE IN JAPAN 395:AEP)	
72	*	A-4617-709-A	DISPLAY BOARD, COMPLETE (MADE IN FRANCE 395:AEP)	
73	*	1-637-907-11	MOTOR VR BOARD (MADE IN JAPAN 395:AEP)	
73		1-637-907-21	MOTOR VR BOARD (MADE IN FRANCE 395:AEP)	
74	*	4-922-980-01	HOLDER LED (395)	
75	*	1-637-905-11	HP BOARD (MADE IN JAPAN 395:AEP)	
75	*	1-637-905-21	HP BOARD (MADE IN FRANCE 395:AEP)	
76	*	1-637-906-11	POWER SW BOARD (MADE IN JAPAN 395:AEP)	
76	*	1-637-906-21	POWER SW BOARD (MADE IN FRANCE 395:AEP)	
CN401		1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
T901	⚠	1-449-922-11	TRANSFORMER, POWER (MADE IN JAPAN 395:AEP)	
T901	⚠	1-449-925-11	TRANSFORMER, POWER (MADE IN FRANCE 395:AEP)	

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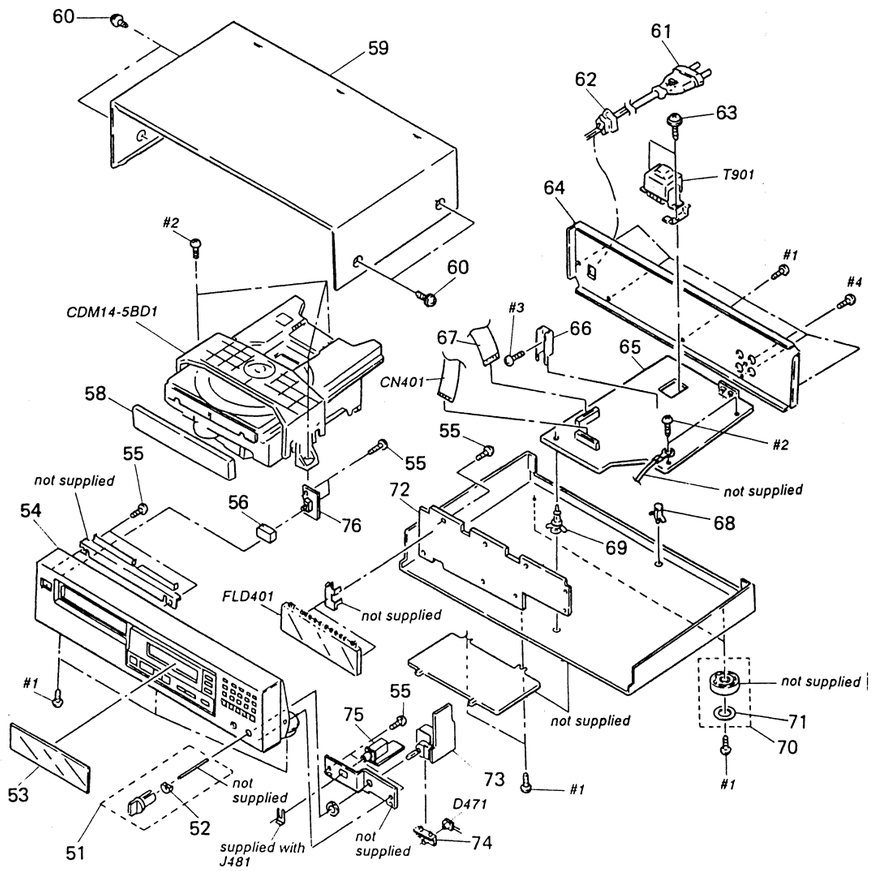
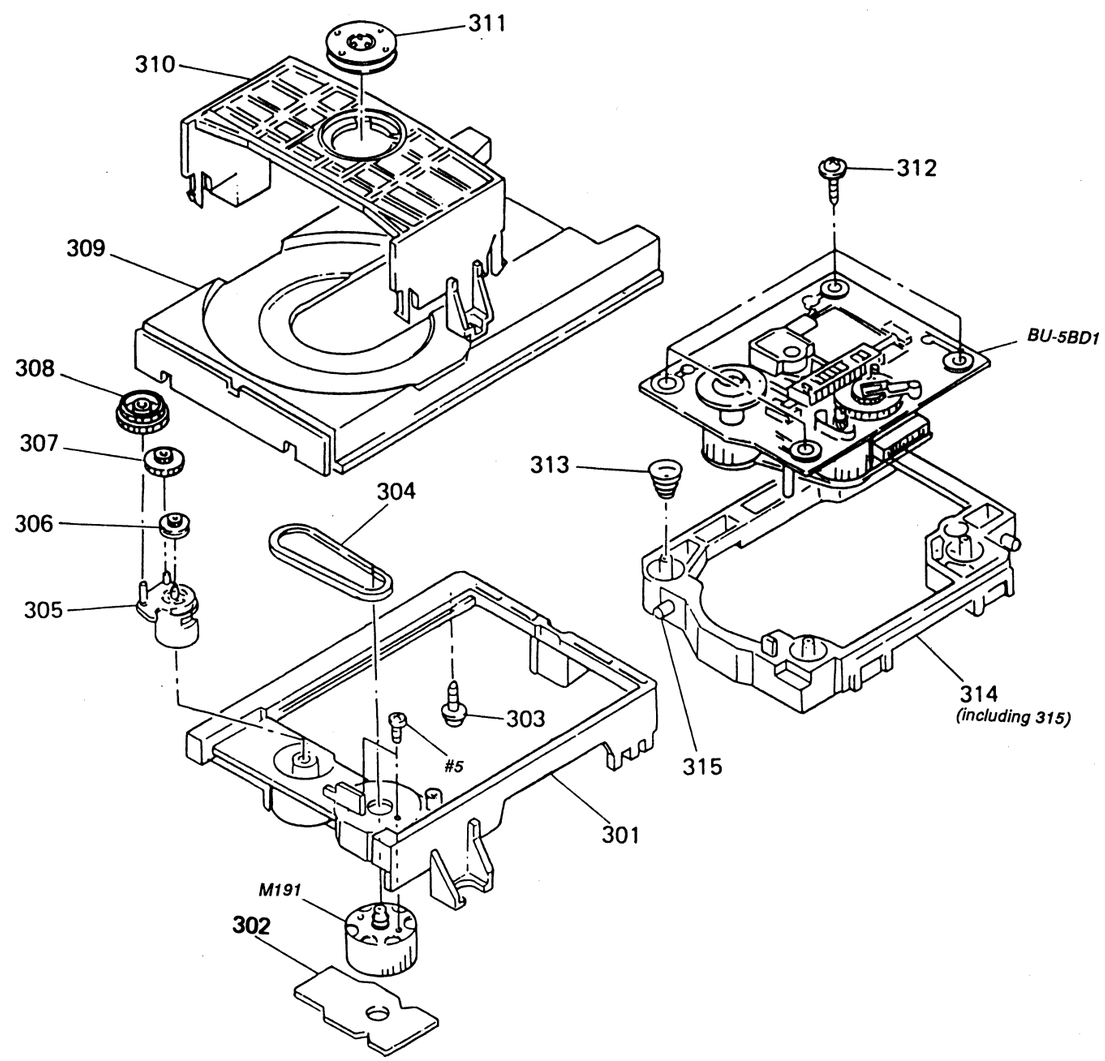
(2) CABINET SECTION (CDP-395)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



Ref. No.	Part No.	Description	Remark
51	A-4604-727-A	KNOB (HP) ASSY	
52	4-922-979-01	INDICATOR	
53	4-942-767-01	PLATE, INDICATION (395)	
54	X-4941-256-1	PANEL ASSY, FRONT (MADE IN JAPAN 395:AEP)	
54	X-4941-257-1	PANEL ASSY, FRONT (MADE IN FRANCE 395:AEP)	
55	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
56	4-922-921-02	BUTTON (POWER) (395)	
58	4-942-763-01	PANEL, LOADING (MADE IN JAPAN 395:AEP)	
58	4-942-763-11	PANEL, LOADING (MADE IN FRANCE 395)	
59	4-929-035-31	CASE (MADE IN JAPAN 395)	
59	4-929-035-41	CASE (MADE IN FRANCE 395)	
60	3-704-366-01	SCREW (CASE) (M3X8)	
61 ⚠	1-574-127-31	CORD, POWER (MADE IN FRANCE 395:AEP)	
61 ⚠	1-575-651-21	CORD, POWER (MADE IN JAPAN 395:AEP)	
62	* 3-703-244-00	BUSHING (2104), CORD	
63	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
64	4-942-768-21	PANEL, BACK (MADE IN JAPAN 395:AEP)	
64	4-942-768-51	PANEL (ALSACE), BACK (MADE IN FRANCE 395:AEP)	
65	* A-4617-688-A	MAIN BOARD, COMPLETE (MADE IN FRANCE 395:AEP)	
65	* A-4617-701-A	MAIN BOARD, COMPLETE (MADE IN JAPAN 395)	
66	4-902-345-01	HEAT SINK	
67	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
68	* 3-349-025-41	HOLDER, PC BOARD	
69	* 4-924-098-31	HOLDER, PC BOARD	
70	X-3304-938-2	FOOT, ASSY (395)	
71	4-923-836-11	CUSHION (395)	
72	* A-4617-700-A	DISPLAY BOARD, COMPLETE (MADE IN JAPAN 395:AEP)	
72	* A-4617-709-A	DISPLAY BOARD, COMPLETE (MADE IN FRANCE 395:AEP)	
73	* 1-637-907-11	MOTOR VR BOARD (MADE IN JAPAN 395:AEP)	
73	1-637-907-21	MOTOR VR BOARD (MADE IN FRANCE 395:AEP)	
74	* 4-922-980-01	HOLDER LED (395)	
75	* 1-637-905-11	HP BOARD (MADE IN JAPAN 395:AEP)	
75	* 1-637-905-21	HP BOARD (MADE IN FRANCE 395:AEP)	
76	* 1-637-906-11	POWER SW BOARD (MADE IN JAPAN 395:AEP)	
76	* 1-637-906-21	POWER SW BOARD (MADE IN FRANCE 395:AEP)	
CN401	1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
T901 ⚠	1-449-922-11	TRANSFORMER, POWER (MADE IN JAPAN 395:AEP)	
T901 ⚠	1-449-925-11	TRANSFORMER, POWER (MADE IN FRANCE 395:AEP)	

(3) MD SECTION (CDM14-5BD1)



Ref. No.	Part No.	Description	Remark
301	4-933-111-01	CHASSIS (MD)	
302	* 1-632-202-11	LOADING BOARD (MADE IN JAPAN)	
302	* 1-632-202-21	LOADING BOARD (MADE IN FRANDE)	
303	* 4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	
309	4-933-112-01	TABLE, DISK	
310	4-933-110-01	HOLDER (MG)	
311	* 1-452-538-11	MAGNET	
312	4-933-134-01	SCREW +PTPWH M2.6X6	
313	4-917-541-01	SPRING (B)	
314	4-933-129-01	HOLDER (BU)	315
315	4-933-108-01	SHAFT (CAM)	
M191	A-4604-363-A	MOTOR (L) ASSY (LOADING)	

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Remark

JAPAN 395:AEP)
FRANCE 395:AEP)
JAPAN 395:AEP)
FRANCE 395:AEP)

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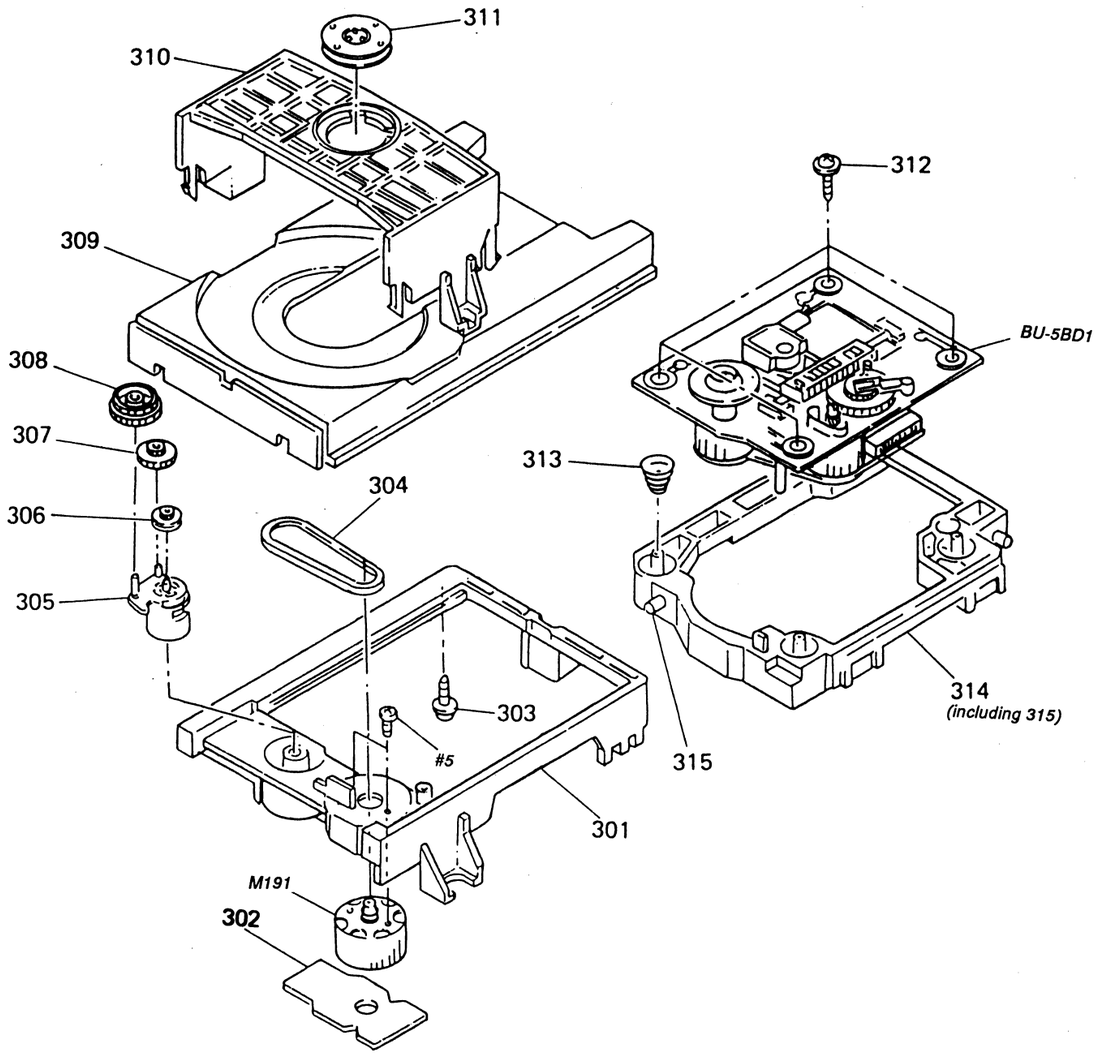
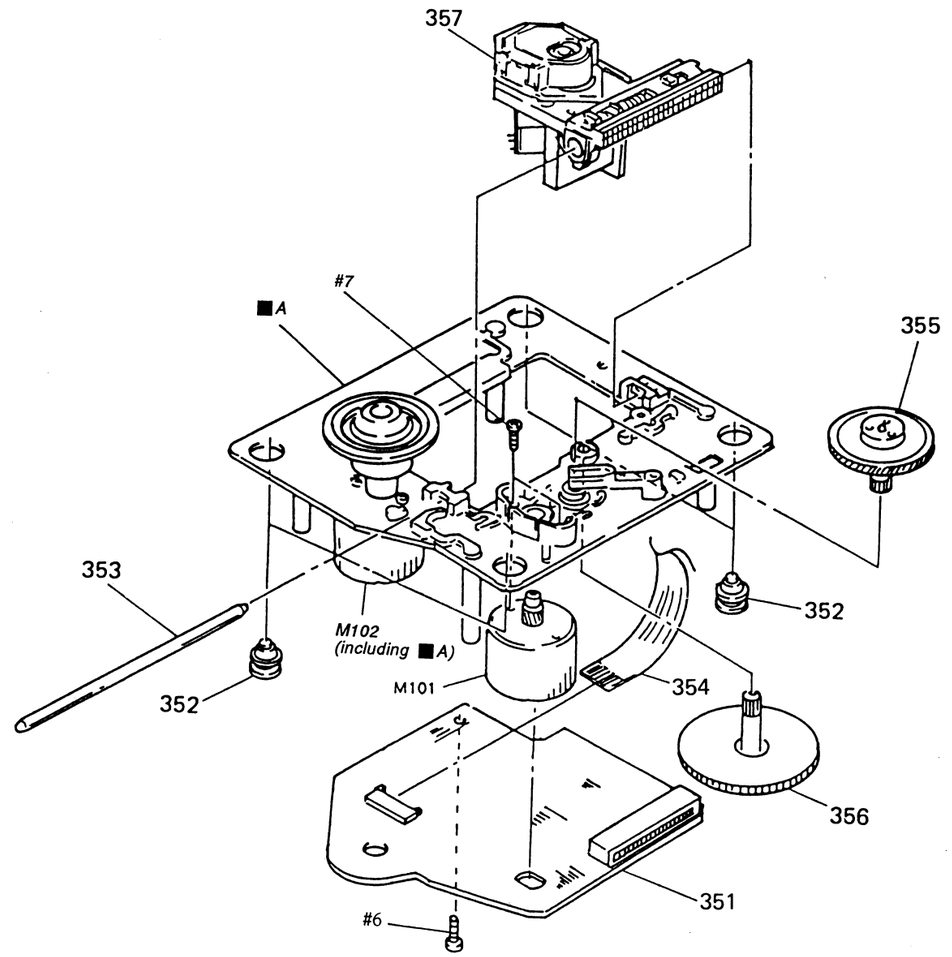
(3) MD SECTION (CDM14-5BD1)



Ref. No.	Part No.	Description	Remark
301	4-933-111-01	CHASSIS (MD)	
302	* 1-632-202-11	LOADING BOARD (MADE IN JAPAN)	
302	* 1-632-202-21	LOADING BOARD (MADE IN FRANDE)	
303	* 4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	
309	4-933-112-01	TABLE, DISK	
310	4-933-110-01	HOLDER (MG)	
311	* 1-452-538-11	MAGNET	
312	4-933-134-01	SCREW +PTPWH M2.6X6	
313	4-917-541-01	SPRING (B)	
314	4-933-129-01	HOLDER (BU)	315
315	4-933-108-01	SHAFT (CAM)	
M191	A-4604-363-A	MOTOR (L) ASSY (LOADING)	

(4) PICK-UP BLOCK (BU-5BD1)



Ref. No.	Part No.	Description	Remark
351	A-4617-161-A	BD BOARD, COMPLETE	
352	4-933-126-01	INSULATOR (A)	
353	4-917-565-01	SHAFT, SLED	
354	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
355	4-917-567-01	GEAR (M)	
356	4-917-564-01	GEAR (P), FLATNESS	
357 ⚠	8-848-144-11	DEVICE, OPTICAL KSS-240A	
M101	X-4917-504-1	MOTOR, ASSY (SLED)	
M102	X-4917-523-3	MOTOR, ASSY (SPINDLE)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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SECTION 7
ELECTRICAL PARTS LIST

BD

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some differences from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxicide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description		Remark
	A-4617-161-A	BD BOARD, COMPLETE		
		**********		
		< CAPACITOR >		
C101	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C102	1-163-989-11	CERAMIC CHIP 0.033uF	10%	25V
C103	1-126-163-11	ELECT 4.7uF	20%	50V
C104	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C105	1-126-154-11	ELECT 47uF	20%	6.3V
C106	1-126-154-11	ELECT 47uF	20%	6.3V
C107	1-126-154-11	ELECT 47uF	20%	6.3V
C108	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C109	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C110	1-163-989-11	CERAMIC CHIP 0.033uF	10%	25V
C111	1-131-367-00	TANTALUM 22uF	10%	20V
C112	1-164-232-11	CERAMIC CHIP 0.01uF		50V
C113	1-164-232-11	CERAMIC CHIP 0.01uF		50V
C114	1-164-161-11	CERAMIC CHIP 0.0022uF	10%	100V
C115	1-164-161-11	CERAMIC CHIP 0.0022uF	10%	100V
C117	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C118	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C119	1-164-161-11	CERAMIC CHIP 0.0022uF	10%	100V
C120	1-163-989-11	CERAMIC CHIP 0.033uF	10%	25V
C151	1-163-019-00	CERAMIC CHIP 0.0068uF	10%	50V
C152	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C153	1-163-006-11	CERAMIC CHIP 560PF	10%	50V
C154	1-164-161-11	CERAMIC CHIP 0.0022uF	10%	100V
C155	1-163-023-00	CERAMIC CHIP 0.015uF	5%	50V
C171	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C172	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C173	1-163-038-00	CERAMIC CHIP 0.1uF		25V
C174	1-163-038-00	CERAMIC CHIP 0.1uF		25V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN101	1-568-796-11	SOCKET, CONNECTOR 22P			
CN102	1-568-795-11	SOCKET, CONNECTOR 12P			
CN103 *	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P			
		< DIODE >			
D101	8-719-105-72	DIODE RD4.7M-B1			
		< IC >			
IC101	8-752-050-82	IC SC CXA1372Q			
IC102	8-759-822-36	IC LA6532M			
IC103	8-759-633-65	IC M54641L			
		< JUMPER >			
J101	1-216-295-00	METAL CHIP	0	5%	1/10W
J102	1-216-295-00	METAL CHIP	0	5%	1/10W
		< TRANSISTOR >			
Q101	8-729-901-01	TRANSISTOR DTC144EK			
		< RESISTOR >			
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W
R102	1-216-095-00	METAL CHIP	82K	5%	1/10W
R103	1-216-091-00	METAL CHIP	56K	5%	1/10W
R104	1-216-099-00	METAL CHIP	120K	5%	1/10W
R105	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R108	1-216-105-00	METAL CHIP	220K	5%	1/10W
R109	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R110	1-216-049-00	METAL CHIP	1K	5%	1/10W

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BD DISPLAY

Ref. No.	Part No.	Description			Remark
R111	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R112	1-216-083-00	METAL CHIP	27K	5% 1/10W	
R113	1-216-071-00	METAL CHIP	8.2K	5% 1/10W	
R114	1-216-105-00	METAL CHIP	220K	5% 1/10W	
R152	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R153	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R154	1-216-085-00	METAL CHIP	33K	5% 1/10W	
R155	1-216-093-00	METAL CHIP	68K	5% 1/10W	
R156	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R157	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R158	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R159	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R160	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R171	1-216-001-00	METAL CHIP	10	5% 1/10W	
R172	1-216-001-00	METAL CHIP	10	5% 1/10W	
R173	1-216-001-00	METAL CHIP	10	5% 1/10W	
R174	1-216-001-00	METAL CHIP	10	5% 1/10W	
		< VARIABLE RESISTOR >			
RV101	1-238-016-11	RES, ADJ, CARBON 10K (TRACKING GAIN)			
RV102	1-238-016-11	RES, ADJ, CARBON 10K (FOCUS GAIN)			
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)			
**********					
*	A-4617-686-A	DISPLAY BOARD, COMPLETE (MADE IN FRANCE M31)			
*	A-4617-700-A	DISPLAY BOARD, COMPLETE (MADE IN JAPAN 395)			
*	A-4617-709-A	DISPLAY BOARD, COMPLETE (MADE IN FRANCE 395)			
*	A-4617-774-A	DISPLAY BOARD, COMPLETE (MADE IN JAPAN M31)			
		**********			
*	4-923-103-01	HOLDER, FL TUBE			
		< CAPACITOR >			
C401	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C402	1-124-261-00	ELECT	10uF	20% 50V	
C403	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C404	1-124-261-00	ELECT	10uF	20% 50V	
		< CONNECTOR >			
CN401	1-535-883-11	JUMPER, FILM (WITH TERMINAL) (M31)			
		< FLUORESCENT INDICATOR >			
FLD401	1-519-611-11	INDICATOR TUBE, FLUORESCENT			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC401	8-752-817-41	IC CXP50112-097Q			
IC402	8-749-920-83	IC GP1U52XB			
		< RESISTOR >			
R402	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R403	1-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R404	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R405	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R406	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R407	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R408	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R409	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R410	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R411	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R412	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R413	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R414	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R415	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R416	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R417	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R418	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R419	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R420	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R421	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R422	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R423	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R424	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R425	1-216-069-00	METAL CHIP	6.8K	5% 1/10W	
R426	1-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R427	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R428	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R429	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R430	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R431	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R432	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R433	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R434	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R435	1-216-079-00	METAL CHIP	18K	5% 1/10W	
		< SWITCH > (MADE IN JAPAN)			
S401	1-554-303-52	SWITCH, KEY BOARD (1)			
S402	1-554-303-52	SWITCH, KEY BOARD (2)			
S403	1-554-303-52	SWITCH, KEY BOARD (3)			
S404	1-554-303-52	SWITCH, KEY BOARD (4)			
S405	1-554-303-52	SWITCH, KEY BOARD (5)			

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Ref. No.	Part No.	Description	Remark
S406	1-554-303-52	SWITCH, KEY BOARD (6)	
S407	1-554-303-52	SWITCH, KEY BOARD (7)	
S408	1-554-303-52	SWITCH, KEY BOARD (8)	
S409	1-554-303-52	SWITCH, KEY BOARD (9)	
S410	1-554-303-52	SWITCH, KEY BOARD (10)	
S411	1-554-303-52	SWITCH, KEY BOARD (11)	
S412	1-554-303-52	SWITCH, KEY BOARD (12)	
S413	1-554-303-52	SWITCH, KEY BOARD (>12)	
S414	1-554-303-52	SWITCH, KEY BOARD (MUSIC SCAN)	
S415	1-554-303-52	SWITCH, KEY BOARD (P. SEARCH)	
S416	1-554-303-52	SWITCH, KEY BOARD (CONTINUE)	
S417	1-554-303-52	SWITCH, KEY BOARD (SHUFFLE)	
S418	1-554-303-52	SWITCH, KEY BOARD (PROGRAM)	
S419	1-554-303-52	SWITCH, KEY BOARD (EDIT/TIME FADE)	
S420	1-554-303-52	SWITCH, KEY BOARD (▶▶▌ ▷▷)	
S421	1-554-303-52	SWITCH, KEY BOARD (▌◀◀ ◁◁)	
S422	1-554-303-52	SWITCH, KEY BOARD (□)	
S423	1-554-303-52	SWITCH, KEY BOARD (▌▌)	
S424	1-554-303-52	SWITCH, KEY BOARD (▶)	
S425	1-554-303-52	SWITCH, KEY BOARD (≙OPEN/CLOSE)	
S426	1-554-303-52	SWITCH, KEY BOARD (CHECK)	
S427	1-554-303-52	SWITCH, KEY BOARD (CLEAR)	
S428	1-554-303-52	SWITCH, KEY BOARD (TIME)	
S429	1-554-303-52	SWITCH, KEY BOARD (REPEAT)	
S430	1-554-303-52	SWITCH, KEY BOARD (FADER)	
		< SWITCH > (MADE IN FRANCE)	
S401	1-554-303-81	SWITCH, KEY BOARD (1)	
S402	1-554-303-81	SWITCH, KEY BOARD (2)	
S403	1-554-303-81	SWITCH, KEY BOARD (3)	
S404	1-554-303-81	SWITCH, KEY BOARD (4)	
S405	1-554-303-81	SWITCH, KEY BOARD (5)	
S406	1-554-303-81	SWITCH, KEY BOARD (6)	
S407	1-554-303-81	SWITCH, KEY BOARD (7)	
S408	1-554-303-81	SWITCH, KEY BOARD (8)	
S409	1-554-303-81	SWITCH, KEY BOARD (9)	
S410	1-554-303-81	SWITCH, KEY BOARD (10)	
S411	1-554-303-81	SWITCH, KEY BOARD (11)	
S412	1-554-303-81	SWITCH, KEY BOARD (12)	
S413	1-554-303-81	SWITCH, KEY BOARD (>12)	
S414	1-554-303-81	SWITCH, KEY BOARD (MUSIC SCAN)	
S415	1-554-303-81	SWITCH, KEY BOARD (P. SEARCH)	
S416	1-554-303-81	SWITCH, KEY BOARD (CONTINUE)	
S417	1-554-303-81	SWITCH, KEY BOARD (SHUFFLE)	
S418	1-554-303-81	SWITCH, KEY BOARD (PROGRAM)	
S419	1-554-303-81	SWITCH, KEY BOARD (EDIT/TIME FADE)	
S420	1-554-303-81	SWITCH, KEY BOARD (▶▶▌ ▷▷)	

Ref. No.	Part No.	Description	Remark
S421	1-554-303-81	SWITCH, KEY BOARD (▌◀◀ ◁◁)	
S422	1-554-303-81	SWITCH, KEY BOARD (□)	
S423	1-554-303-81	SWITCH, KEY BOARD (▌▌)	
S424	1-554-303-81	SWITCH, KEY BOARD (▶)	
S425	1-554-303-81	SWITCH, KEY BOARD (≙OPEN/CLOSE)	
S426	1-554-303-81	SWITCH, KEY BOARD (CHECK)	
S427	1-554-303-81	SWITCH, KEY BOARD (CLEAR)	
S428	1-554-303-81	SWITCH, KEY BOARD (TIME)	
S429	1-554-303-81	SWITCH, KEY BOARD (REPEAT)	
S430	1-554-303-81	SWITCH, KEY BOARD (FADER)	
		< CERAMIC >	
X401	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	
		**********	
*	1-637-819-11	HP BOARD (MADE IN JAPAN M31)	
*	1-637-819-21	HP BOARD (MADE IN FRANCE M31)	
*	1-637-905-11	HP BOARD (MADE IN JAPAN 395:AEP)	
*	1-637-905-21	HP BOARD (MADE IN FRANCE 395:AEP)	
		**********	
		< CAPACITOR >	
C481	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C482	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C483	1-163-038-00	CERAMIC CHIP 0.1uF 25V (M31)	
		< CONNECTOR >	
CN481 *	1-568-952-11	PIN, CONNECTOR 3P	
		< JACK >	
J481	1-568-519-41	JACK, LARGE TYPE (HEADPHONES M31/ PHONES 395)	
		< COIL >	
L481	1-424-090-21	COIL, LINE FILTER (395)	
L482	1-424-090-21	COIL, LINE FILTER (395)	
L483	1-424-090-21	COIL, LINE FILTER (395)	
		< RESISTOR >	
R481	1-216-019-00	METAL CHIP 56 5% 1/10W	
R482	1-216-019-00	METAL CHIP 56 5% 1/10W	
		**********	
*	1-632-202-11	LOADING BOARD (MADE IN JAPAN)	
*	1-632-202-21	LOADING BOARD (MADE IN FRANCE)	
		**********	

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Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN301	* 1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
		< SWITCH >			
S191	1-572-086-11	SWITCH, LEAF (LOAD OUT)			
S192	1-572-086-11	SWITCH, LEAF (LOAD IN)			
**********					
	* A-4617-688-A	MAIN BOARD, COMPLETE (MADE IN FRANCE M31/395)			
	* A-4617-701-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M31:AEP, Australian/395:AEP)			
	* A-4617-703-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M31:E)			
		**********			
	4-902-345-01	HEAT SINK			
	7-682-547-09	SCREW +B 3X6			
		< CAPACITOR >			
C201	1-124-572-11	ELECT	100uF	20%	63V
C202	1-124-907-11	ELECT	10uF	20%	50V
C203	1-124-887-00	ELECT	3300uF	20%	16V
C204	1-124-898-11	ELECT	4700uF	20%	16V
C205	1-124-927-11	ELECT	4.7uF	20%	100V
C206	1-124-907-11	ELECT	10uF	20%	50V
C207	1-124-907-11	ELECT	10uF	20%	50V
C208	1-124-472-11	ELECT	470uF	20%	10V
C209	1-124-472-11	ELECT	470uF	20%	10V
C210	1-124-120-11	ELECT	220uF	20%	25V
C211	1-124-472-11	ELECT	470uF	20%	10V
C212	1-124-472-11	ELECT	470uF	20%	10V
C221	1-164-159-11	CERAMIC	0.1uF		50V
C301	1-124-477-11	ELECT	47uF	20%	25V
C302	1-124-903-11	ELECT	1uF	20%	50V
C311	1-106-383-00	MYLAR	0.047uF	5%	200V
C312	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C313	1-161-494-00	CERAMIC	0.022uF		25V
C314	1-162-306-11	CERAMIC	0.01uF	20%	16V
C315	1-124-902-00	ELECT	0.47uF	20%	50V
C316	1-161-494-00	CERAMIC	0.022uF		25V
C317	1-164-159-11	CERAMIC	0.1uF		50V
C321	1-161-494-00	CERAMIC	0.022uF		25V
C331	1-162-208-31	CERAMIC	24PF	5%	50V
C332	1-106-220-00	MYLAR	0.1uF	5%	100V
C333	1-161-494-00	CERAMIC	0.022uF		25V
C335	1-162-205-31	CERAMIC	18PF	5%	50V
C341	1-161-494-00	CERAMIC	0.022uF		25V
C342	1-124-477-11	ELECT	47uF	20%	25V
C343	1-161-494-00	CERAMIC	0.022uF		25V
C344	1-161-494-00	CERAMIC	0.022uF		25V
C345	1-124-477-11	ELECT	47uF	20%	25V
C346	1-164-159-11	CERAMIC	0.1uF		50V
C347	1-124-477-11	ELECT	47uF	20%	25V
C348	1-164-159-11	CERAMIC	0.1uF		50V
C349	1-161-494-00	CERAMIC	0.022uF		25V
C350	1-124-477-11	ELECT	47uF	20%	25V
C351	1-161-494-00	CERAMIC	0.022uF		25V
C352	1-124-477-11	ELECT	47uF	20%	25V
C353	1-162-199-31	CERAMIC	10PF	5%	50V
C354	1-162-199-31	CERAMIC	10PF	5%	50V
C355	1-161-494-00	CERAMIC	0.022uF		25V
C356	1-124-477-11	ELECT	47uF	20%	25V
C357	1-124-472-11	ELECT	470uF	20%	10V
C361	1-162-285-31	CERAMIC	180PF	10%	50V
C362	1-162-285-31	CERAMIC	180PF	10%	50V
C363	1-162-283-31	CERAMIC	120PF	10%	50V
C364	1-162-283-31	CERAMIC	120PF	10%	50V
C365	1-162-283-31	CERAMIC	120PF	10%	50V
C366	1-162-283-31	CERAMIC	120PF	10%	50V
C367	1-161-494-00	CERAMIC	0.022uF		25V
C368	1-161-494-00	CERAMIC	0.022uF		25V
C371	1-106-359-00	MYLAR	4700PF	5%	200V
C372	1-106-359-00	MYLAR	4700PF	5%	200V
C373	1-106-345-00	MYLAR	0.0012uF	5%	100V
C374	1-106-345-00	MYLAR	0.0012uF	5%	100V
C375	1-161-494-00	CERAMIC	0.022uF		25V
C376	1-161-494-00	CERAMIC	0.022uF		25V
C377	1-124-477-11	ELECT	47uF	20%	25V
C378	1-124-477-11	ELECT	47uF	20%	25V
C379	1-106-349-00	MYLAR	0.0018uF	5%	100V
C380	1-106-349-00	MYLAR	0.0018uF	5%	100V
C392	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN201	* 1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P			
CN301	* 1-568-843-11	SOCKET, CONNECTOR 28P			
CN302	* 1-568-822-11	SOCKET, CONNECTOR 22P			
CN381	* 1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CN382	* 1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
		< DIODE >			
D201	8-719-200-82	DIODE 11ES2			
D202	8-719-109-96	DIODE RD6.8ES-B1			
D203	8-719-200-82	DIODE 11ES2			
D204	8-719-200-82	DIODE 11ES2			
D205	8-719-200-82	DIODE 11ES2			

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Ref. No.	Part No.	Description	Remark
D206	8-719-200-82	DIODE 11ES2	
D207	8-719-114-49	DIODE RD7.5JS-B2	
D208	8-719-109-89	DIODE RD5.6ES-B2	
D209	8-719-107-94	DIODE 1SS202-1 (MADE IN FRANCE)	
D209	8-719-987-63	DIODE 1N4148M (MADE IN JAPAN)	
D341	8-719-210-21	DIODE 11EQS04	
D351	8-719-107-94	DIODE 1SS202-1 (MADE IN FRANCE)	
D351	8-719-987-63	DIODE 1N4148M (MADE IN JAPAN)	
		< IC >	
IC201	8-759-633-42	IC M5293L	
IC202	8-759-630-21	IC M5290P-16	
IC203	8-759-945-58	IC RC4558P	
IC301	8-752-337-26	IC CXD2500AQ	
IC302	8-752-328-61	IC CXD1244S	
IC303	8-759-917-18	IC SN74HCU04AN	
IC305	8-752-334-87	IC CXD2552Q	
IC306	8-759-990-82	IC TL082CP	
IC307	8-759-945-58	IC RC4558P	
		< JACK >	
J381	* 1-569-443-11	JACK, PIN 4P (LINE OUT)	
		< COIL >	
L331	1-408-403-00	INDUCTOR 3.3uH	
		< LINK >	
PS201 ⚠	1-532-685-00	LINK, IC (ICP-N20)	
PS202 ⚠	1-532-637-00	LINK, IC 1.0A (ICP-N25)	
		< TRANSISTOR >	
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q202	8-729-140-96	TRANSISTOR 2SD774-34	
Q203	8-729-111-67	TRANSISTOR 2SB1094-L	
Q204	8-729-900-65	TRANSISTOR DTA144ES	
Q205	8-729-900-89	TRANSISTOR DTC144ES	
Q206	8-729-900-89	TRANSISTOR DTC144ES	
Q207	8-729-230-45	TRANSISTOR 2SC2458-YGR	
Q208	8-729-821-73	TRANSISTOR 2SB1274SA-RS	
Q209	8-729-281-52	TRANSISTOR 2SC1815-Y	
Q343	8-729-900-65	TRANSISTOR DTA144ES	
Q344	8-729-900-89	TRANSISTOR DTC144ES	
Q371	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q372	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q373	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q374	8-729-141-30	TRANSISTOR 2SC3623A-LK	

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R201	1-249-435-11	CARBON	33K	5%	1/4W
R202	1-249-438-11	CARBON	56K	5%	1/4W
R203	1-249-429-11	CARBON	10K	5%	1/4W
R204	1-249-425-11	CARBON	4.7K	5%	1/4W
R205	1-249-425-11	CARBON	4.7K	5%	1/4W
R206	1-249-417-11	CARBON	1K	5%	1/4W
R207	1-249-417-11	CARBON	1K	5%	1/4W
R208	1-249-423-11	CARBON	3.3K	5%	1/4W
R209	1-249-413-11	CARBON	470	5%	1/4W
R210	1-249-429-11	CARBON	10K	5%	1/4W
R211	1-249-410-11	CARBON	270	5%	1/4W
R214	1-249-417-11	CARBON	1K	5%	1/4W
R301	1-249-417-11	CARBON	1K	5%	1/4W
R302	1-249-417-11	CARBON	1K	5%	1/4W
R303	1-249-421-11	CARBON	2.2K	5%	1/4W
R304	1-249-417-11	CARBON	1K	5%	1/4W
R311	1-249-423-11	CARBON	3.3K	5%	1/4W
R312	1-249-429-11	CARBON	10K	5%	1/4W
R313	1-249-423-11	CARBON	3.3K	5%	1/4W
R314	1-249-429-11	CARBON	10K	5%	1/4W
R315	1-249-417-11	CARBON	1K	5%	1/4W
R316	1-249-417-11	CARBON	1K	5%	1/4W
R317	1-249-420-11	CARBON	1.8K	5%	1/4W
R318	1-249-441-11	CARBON	100K	5%	1/4W
R321	1-249-417-11	CARBON	1K	5%	1/4W
R322	1-249-417-11	CARBON	1K	5%	1/4W
R323	1-249-417-11	CARBON	1K	5%	1/4W
R324	1-249-418-11	CARBON	1.2K	5%	1/4W
R331	1-249-409-11	CARBON	220	5%	1/4W
R332	1-247-887-00	CARBON	220K	5%	1/4W
R333	1-249-417-11	CARBON	1K	5%	1/4W
R334	1-249-409-11	CARBON	220	5%	1/4W
R341	1-249-393-11	CARBON	10	5%	1/4W
R342	1-249-417-11	CARBON	1K	5%	1/4W
R347	1-249-441-11	CARBON	100K	5%	1/4W
R348	1-249-429-11	CARBON	10K	5%	1/4W
R351	1-249-429-11	CARBON	10K	5%	1/4W
R352	1-249-429-11	CARBON	10K	5%	1/4W
R353	1-249-429-11	CARBON	10K	5%	1/4W
R354	1-249-429-11	CARBON	10K	5%	1/4W
R355	1-247-848-11	CARBON	5.1K	5%	1/4W
R356	1-249-405-11	CARBON	100	5%	1/4W
R361	1-247-840-00	CARBON	2.4K	5%	1/4W
R362	1-247-840-00	CARBON	2.4K	5%	1/4W
R363	1-247-840-00	CARBON	2.4K	5%	1/4W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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Ref. No.	Part No.	Description			Remark
R364	1-247-840-00	CARBON	2.4K	5%	1/4W
R365	1-249-432-11	CARBON	18K	5%	1/4W
R366	1-249-432-11	CARBON	18K	5%	1/4W
R367	1-249-432-11	CARBON	18K	5%	1/4W
R368	1-249-432-11	CARBON	18K	5%	1/4W
R369	1-249-419-11	CARBON	1.5K	5%	1/4W
R370	1-249-419-11	CARBON	1.5K	5%	1/4W
R371	1-249-419-11	CARBON	1.5K	5%	1/4W
R372	1-249-419-11	CARBON	1.5K	5%	1/4W
R373	1-247-887-00	CARBON	220K	5%	1/4W
R374	1-247-887-00	CARBON	220K	5%	1/4W
R375	1-249-409-11	CARBON	220	5%	1/4W
R376	1-249-409-11	CARBON	220	5%	1/4W
R377	1-249-409-11	CARBON	220	5%	1/4W
R378	1-249-409-11	CARBON	220	5%	1/4W
R379	1-249-425-11	CARBON	4.7K	5%	1/4W
R380	1-249-425-11	CARBON	4.7K	5%	1/4W
R381	1-249-425-11	CARBON	4.7K	5%	1/4W
R382	1-249-425-11	CARBON	4.7K	5%	1/4W
R383	1-249-414-11	CARBON	560	5%	1/4W
R384	1-249-414-11	CARBON	560	5%	1/4W
R389	1-249-414-11	CARBON	560	5%	1/4W
R390	1-249-414-11	CARBON	560	5%	1/4W
		< SWITCH >			
S201 ⚠	1-571-722-11	SWITCH, VOLTAGE SELECTION (VOLTAGE SELECTOR) (M31:E)			
		< CRYSTAL >			
X351	1-579-161-11	VIBRATOR, CRYSTAL (45MHz)			
**********					
*	1-637-817-11	MOTOR VR BOARD (MADE IN JAPAN M31)			
*	1-637-817-21	MOTOR VR BOARD (MADE IN FRANCE M31)			
*	1-637-907-11	MOTOR VR BOARD (MADE IN JAPAN 395)			
*	1-637-907-21	MOTOR VR BOARD (MADE IN FRANCE 395)			
		**********			
*	4-922-980-01	HOLDER (LED)			
		< CAPACITOR >			
C451	1-124-443-00	ELECT	100uF	20%	10V
C452	1-124-443-00	ELECT	100uF	20%	10V
C453	1-163-038-00	CERAMIC	0.1uF		25V (395)
C471	1-124-443-00	ELECT	100uF	20%	10V
C472	1-124-277-11	ELECT	4.7uF	20%	35V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN451	* 1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CN471	* 1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CN472	* 1-568-941-11	PIN, CONNECTOR 3P			
		< DIODE >			
D471	8-719-970-49	DIODE BR4361F (LINE OUT M31/LEVEL 395)			
		< IC >			
IC451	8-759-981-86	IC RC4556MA			
IC471	8-759-962-08	IC BA6208			
		< RESISTOR >			
R451	1-216-085-00	METAL CHIP	33K	5%	1/10W
R452	1-216-085-00	METAL CHIP	33K	5%	1/10W
R453	1-216-079-00	METAL CHIP	18K	5%	1/10W
R454	1-216-079-00	METAL CHIP	18K	5%	1/10W
R455	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R456	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R457	1-216-073-00	METAL CHIP	10K	5%	1/10W
R458	1-216-073-00	METAL CHIP	10K	5%	1/10W
R461	1-216-013-00	METAL CHIP	33	5%	1/10W
R462	1-216-013-00	METAL CHIP	33	5%	1/10W
R471	1-216-037-00	METAL CHIP	330	5%	1/10W
R472	1-216-049-00	METAL CHIP	1K	5%	1/10W
R473	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< VARIABLE RESISTOR >			
RV451	1-238-750-11	RES, VAR, CARBON 10K/10K (PHONE LEVEL) (395)			
RV451	1-238-974-11	RES, VAR, CARBON 10K/10K (LINE OUT) (M31)			
**********					
*	1-637-818-11	POWER SW BOARD (MADE IN JAPAN M31)			
*	1-637-818-21	POWER SW BOARD (MADE IN FRANCE M31)			
*	1-637-906-11	POWER SW BOARD (MADE IN JAPAN 395)			
*	1-637-906-21	POWER SW BOARD (MADE IN FRANCE 395)			
		**********			
		< CONNECTOR >			
CN491	* 1-568-953-11	PIN, CONNECTOR 4P			
		< SWITCH >			
S491	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)			

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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POWER SW

Ref. No.		Part No.	Description	Remark
			MISCELLANEOUS	
			**********	
11	⚠	1-574-127-31	CORD, POWER (MADE IN FRANCE:AEP)	
11	⚠	1-574-358-31	CORD, POWER (WITH CONNECTOR) (Australian)	
11	⚠	1-575-651-21	CORD, POWER (MADE IN JAPAN:AEP)	
11	⚠	1-575-653-21	CORD, POWER (E)	
12	⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (M31:E)	
18		1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
61	⚠	1-574-127-31	CORD, POWER (MADE IN FRANCE 395:AEP)	
61	⚠	1-575-651-21	CORD, POWER (MADE IN JAPAN 395:AEP)	
67		1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
311	*	1-452-538-11	MAGNET	
354		1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
357	⚠	8-848-144-11	DEVICE, OPTICAL KSS-240A	
CN401		1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
CN401		1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
D471		8-719-970-49	DIODE BR4361F (PHONE LEVEL 395)	
FLD401		1-519-611-11	INDICATOR TUBE, FLUORESCENT	
M101		X-4917-504-1	MOTOR, ASSY (SLED)	
M102		X-4917-523-3	MOTOR, ASSY (SPINDLE)	
M191	Y	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
T901	⚠	1-449-922-11	TRANSFORMER, POWER (MADE IN JAPAN M31:AEP, Australian)	
T901	⚠	1-449-923-11	TRANSFORMER, POWER (M31:E)	
T901	⚠	1-449-925-11	TRANSFORMER, POWER(MADE IN FRANCE M31:AEP)	
T901	⚠	1-449-922-11	TRANSFORMER, POWER (MADE IN JAPAN 395:AEP)	
T901	⚠	1-449-925-11	TRANSFORMER, POWER (MADE IN FRANCE 395:AEP)	

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ACCESSORY & PACKING MATERIAL

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		1-465-598-11	COMMANDER, REMOTE (RM-D391) (MADE IN JAPAN)
		1-465-598-21	COMMANDER, REMOTE (RM-D391) (MADE IN FRANCE)
		1-558-271-11	CORD, CONNECTION
		2-181-754-01	COVER (MLY), BATTERY
		3-752-735-11	MANUAL, INSTRUCTION (MADE IN JAPAN) (English, FRENCH, SPANISH, PORTUGUESE)
		3-752-735-41	MANUAL, INSTRUCTION (MADE IN JAPAN: AEP) (GERMAN, DUTCH, SWEDISH, ITALIAN)
		3-752-735-51	MANUAL, INSTRUCTION (MADE IN FRANCE) (English, FRENCH, SPANISH, PORTUGUESE)
		3-752-735-61	MANUAL, INSTRUCTION (MADE IN FRANCE) (GERMAN, DUTCH, SWEDISH, ITALIAN)
	*	4-922-998-03	CUSHION (MADE IN JAPAN M31)
	*	4-925-389-01	CUSHION (MADE IN JAPAN 395)
	*	4-927-355-02	CUSHION (MADE IN FRANCE M31:AEP)
	*	4-929-506-02	CUSHION (MADE IN FRANCE 395)
	*	4-941-548-01	LABEL, CLASS 1
	*	4-939-718-31	INDIVIDUAL CARTON (MADE IN JAPAN 395)
	*	4-942-897-01	INDIVIDUAL CARTON (MADE IN FRANCE 395)
	*	4-942-898-01	INDIVIDUAL CARTON (MADE IN FRANCE M31)
	*	4-944-042-31	INDIVIDUAL CARTON (MADE IN JAPAN M31)

Ref. No.	Part No.	Description	Remark
		HARDWARE LIST	
		**********	
# 1	7-682-548-09	SCREW +BVTT 3X8 (S)	
# 2	7-682-547-04	SCREW +BVTT 3X6 (S)	
# 3	7-682-547-09	SCREW +B 3X6	
# 4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
# 5	7-621-775-10	SCREW +B 2.6X4	
# 6	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
# 7	7-621-255-15	SCREW +P 2X3	

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